

Journal

OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION

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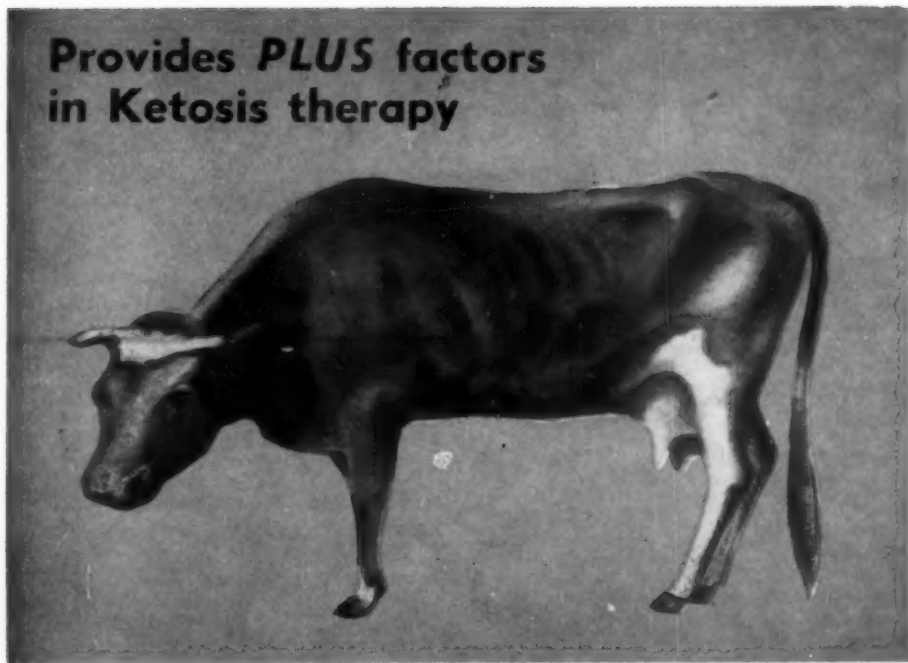
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Reference: 1 M. Lecomte, JAVMA, 125 (1954), 164 (Abstract).



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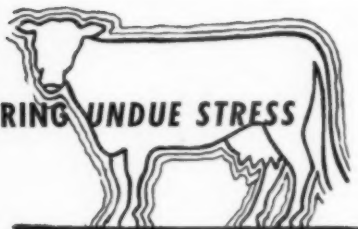
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References: 1. Agricultural Research Service, Losses in Agriculture, June, 1954. Table 20, p. 129. 2. Brown, A. L., et al.: Vet. Med. 50:167, April, 1955.

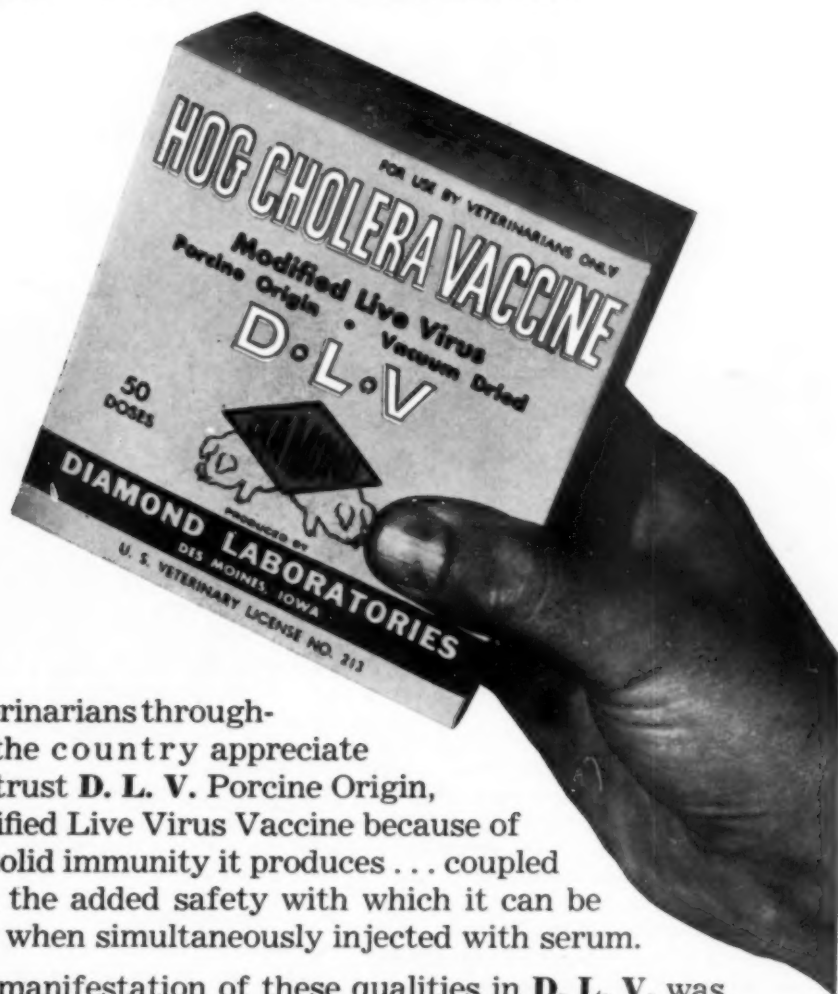


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News From Washington



Vesicular exanthema was diagnosed in the Secaucus, N. J., area on November 5 on a premise adjacent to the one on which the outbreak occurred on August 12 (see JOURNAL, Sept. 15, 1956: adv. p. 8). On November 12 the disease was diagnosed in a herd located 3 miles from the November 5 outbreak. The New Jersey Department of Agriculture decided to continue cooperation with the U.S.D.A. in eradication procedures. The slaughtering and special processing of 9,000 hogs was involved.

★ ★ ★ ★

Cattle scabies was discovered in Los Animas County, Colo., early in November. The condition was diagnosed in a bull said to be heavily infested. The day previous to the diagnosis of scabies in the bull, however, 50 cows had been sold from the same barn. This is the third annual consecutive outbreak.

★ ★ ★ ★

Dr. Harry D. Bruner has been appointed the new chief of medical branch in Atomic Energy Commission's Division of Biology and Medicine. The medical branch of AEC has administrative supervision of diagnosis, treatment, and research in radiation injury, toxicity investigations, and graduate training of industrial physicians.

★ ★ ★ ★

Among the speakers on the Brucellosis Program Planning Conference held in Evanston, Ill., November 27-28 (see JOURNAL, Nov. 15, 1956; adv. p. 8) were Dr. C. D. Van Houweling, director, Livestock Regulatory Programs, ARS; W. G. Johnson, National Safety Council; Dr. F. J. Mulhern, ARS; W. H. Lloyd, Livestock Conservation, Inc.; W. D. Knox, "Hoard's Dairyman;" Thomas F. Arnold, Nebraska rancher; Dr. M. R. Clarkson, deputy administrator, ARS; and Charles Figy, assistant to the Secretary of Agriculture. Dr. R. J. Anderson, ARS, was chairman.

★ ★ ★ ★

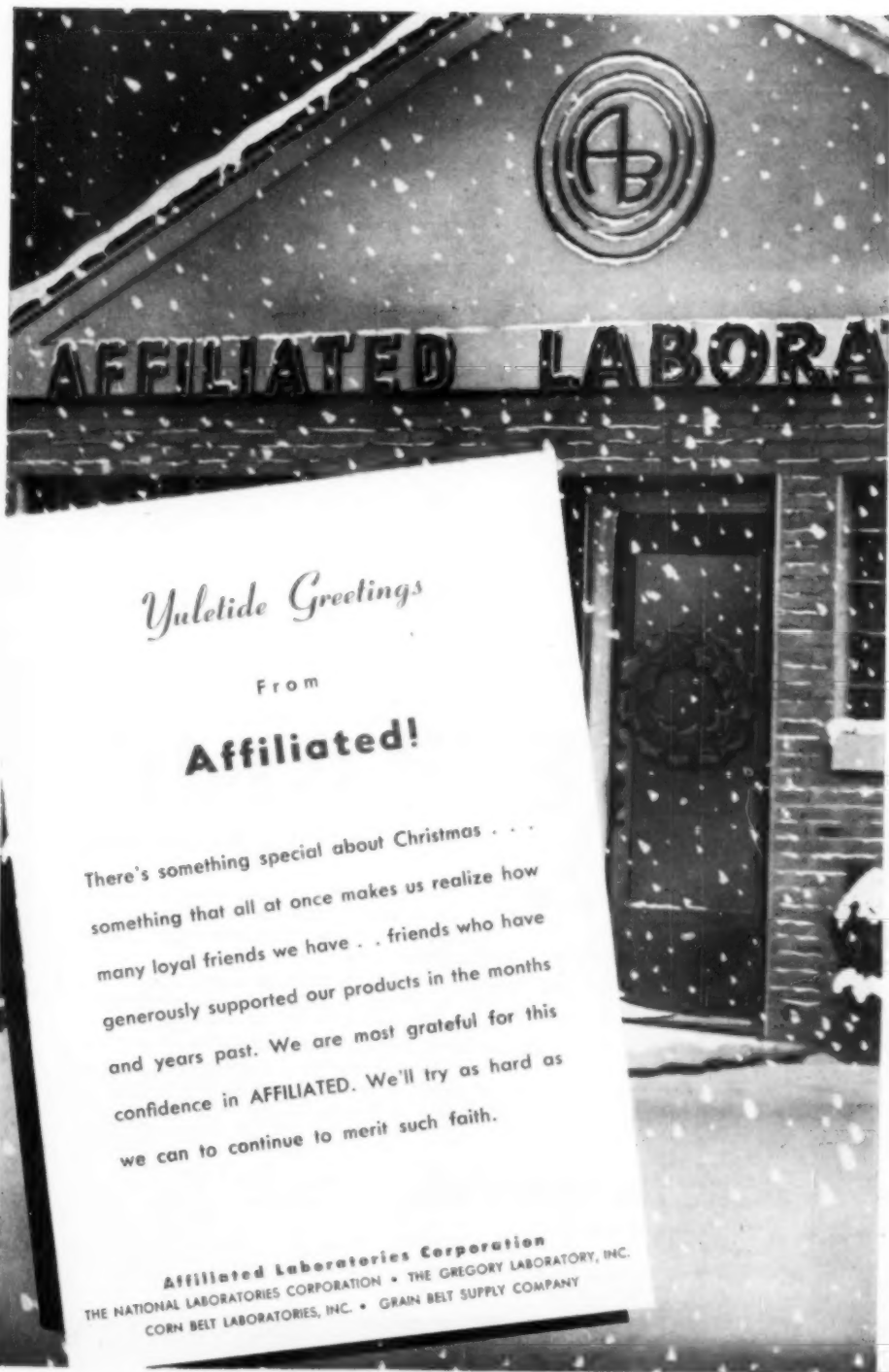
All doctors of medicine in the House of Representatives in the 84th Congress were reelected to the 85th Congress. They are: Ivor D. Fenton (R., Pa.); Walter H. Judd, (R., Minn.); A. L. Miller, (R., Neb.); and Thomas E. Morgan, (D., Pa.). Also elected was Dr. Will Neal (R., W. Va., 4th District). The latter was a member of the 83rd Congress but was defeated for reelection in 1954.

★ ★ ★ ★

The Federal Civil Defense Administration has an **educational kit** explaining the **threat of biological warfare** and how to counteract its effect on persons, livestock, and crops. The kit includes four film strips, six pamphlets, and a special instruction leaflet. It may be obtained from the F.C.D.A., Battle Creek, Mich. Except for the film strips, which are on a loan basis, the kit may be retained.

★ ★ ★ ★

At a conference sponsored jointly by the American Medical Association, the State Department, and the World Medical Association, plans for the First International Motion Picture Exhibition, to be held in conjunction with the Am.M.A. annual convention next June, were reviewed. The exhibition will include motion pictures on medical scientific subjects from member nations of the World Medical Association. Johnson & Johnson will finance the project.



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*Fincher, M. G.; Hayden, C. E., and Hall, A. G.:
Cornell Vet. 30:197 (April) 1940.*

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"87 per cent of the cows with uncomplicated ketosis recovered with one treatment."

*Link, R. P.; Newton, D. I., and Huber, W. G.:
Paper presented at 93rd Ann. Meeting, A.V.M.A.,
Oct. 15-18, 1956, San Antonio, Texas.*

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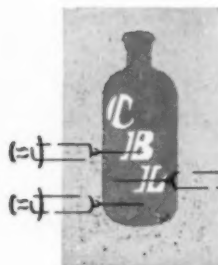
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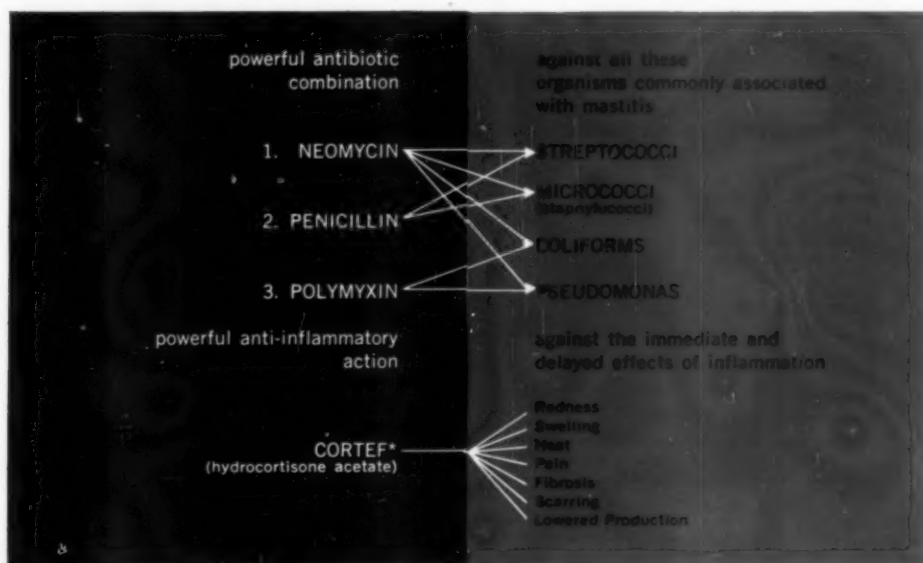
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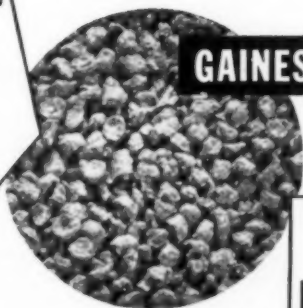
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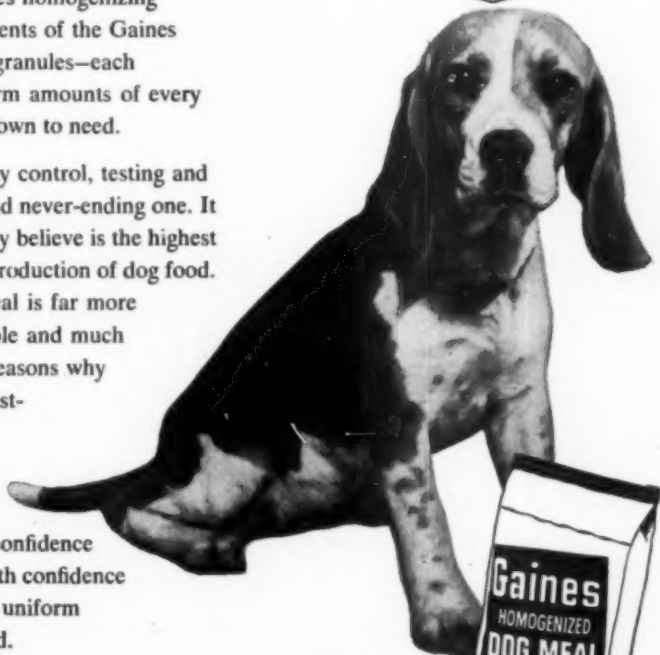
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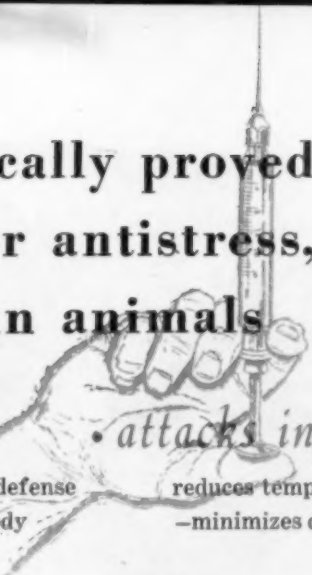


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Pneumonia
Shipping fever

Feline pneumonitis
Distemper

SURGERY IN LARGE AND SMALL ANIMALS

Caesarian section
Traumatic gastritis

Panhysterectomy
for pyometra

FOOT ROT

ACCIDENT CASES

Burns
Gunshot wounds


The role of the adrenal cortex in infections:

"The demand for 'extra' quantities of cortical hormones in infections . . . is evident . . . Thus, any damage to the adrenal cortex, whether existing before the infection . . . or caused by the infection, adds materially to the severity of the condition."

Paschkis, Karl E.: Clinical Endocrinology.
Hoebner-Harper, New York, p. 301 (1954).

"... extensive literature . . . shows that adrenalectomy decreases resistance to the infection and that this defect is corrected by adequate corticoid therapy."

Selye, Hans: Stress. Acta, Inc.
Montreal, Canada, p. 38 (1950).



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Streptococcic Lymphadenitis of the Pharyngeal Region of Swine

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Ames, Iowa

A *STREPTOCOCCUS* SP. of Lancefield's serological group E was regularly isolated from the exudates of abscesses of the pharyngeal region of swine.² These lesions are of the type described by Newsom³ and have been called swine jowl abscesses.¹ The term, "jowl," designates the anatomical region involved. Clinically, the superficially located abscesses are embedded in the jowls and protrude from them (fig. 1, 2).

Various other kinds of bacteria were occasionally found² associated with jowl abscesses. *Corynebacterium pyogenes* (12.8%) and *Pasteurella multocida* (5.89%) headed this list. The initial objective in the present work was to discover the etiological agent(s) of jowl abscesses and also to discover its portal of entry and to partially define the pathogenesis of the disease.

METHODS OF PROCEDURE

Disease-free pigs of various breeds with initial weights of 40 to 60 lb. were used in the experiments. The pigs were confined indoors in concrete-floored pens that were thoroughly disinfected before use. Potable water and a commercial pig meal were given to the pigs. Preinoculation rectal temperature ranges were established for all animals. Swabs of pharyngeal mucus and nasal mucus were taken for bacteriological examination. Preinoculation leukocyte counts were taken in some instances.

Strain CD52 of the group E *Streptococcus* (GES) was used in preparing the broth culture inoculum. Satisfactory growth was obtained using tryptose broth with 1 per cent of dextrose added. Strain CD52 was originally isolated in pure cul-

ture from a jowl abscess of a market hog raised where the disease was enzootic. The strains of *C. pyogenes* and *Past. multocida* utilized were isolated from similar lesions.

Inoculum was fed to some pigs after pouring it over dry pig meal (table 1). Others were inoculated intragastrically or intraenterically by injection through the wall of the gut following laparotomy, to preclude contamination of the oral or pharyngeal cavities, or by other routes (table 2).

Postinoculation procedures included frequent observations recording of rectal temperatures, leukocyte counts, and bacteriological examination of blood, feces, nasal mucus, and pharyngeal mucus. Periodically, 5 ml. of venous blood was obtained from each animal for bacteriological studies. Arterial (tail) blood was obtained from the animal which was inoculated intravenously.

At necropsy, all lymph nodes of the pharyngeal region were cut into thin slices, and the cut surfaces were examined. Materials routinely cultured at necropsy included abscess exudate, mucosa of the maxillary sinuses, nasal turbinates, tonsillar tissue, mandibular lymph nodes, retropharyngeal lymph nodes, and heart blood.

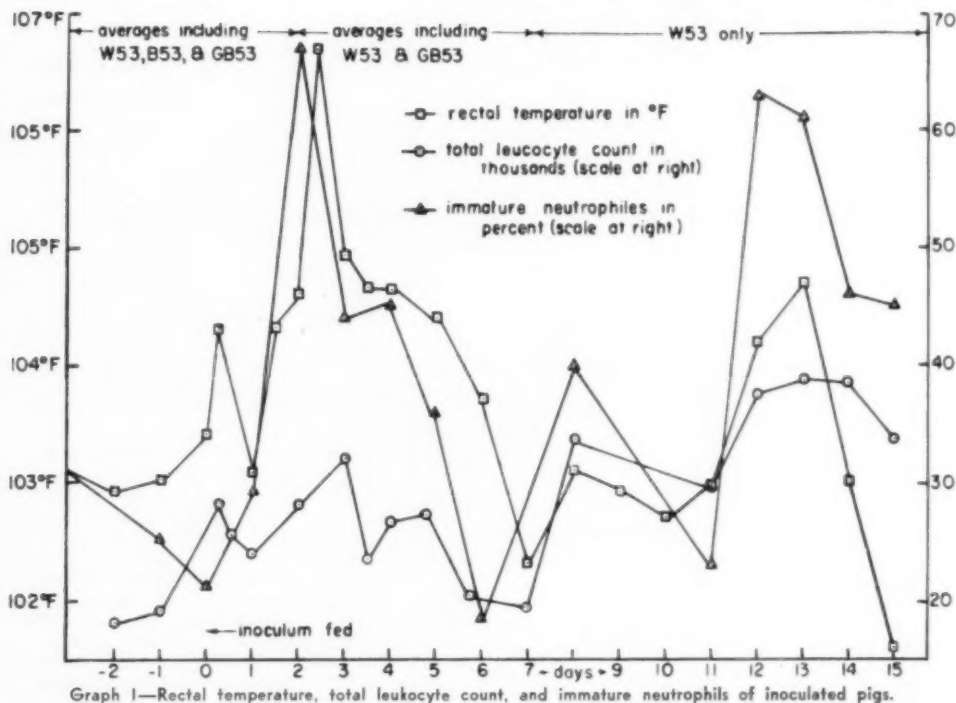
RESULTS

Abscesses developed in the lymph nodes of the pharyngeal region of the pigs which received the GES inoculum in the feed (table 1) or by intranasal or intrapharyngeal instillation (table 2). The test organism was recovered in pure culture from the exudate. Streptococci were abundant in stained smears of the exudate and in stained tissue sections of an abscess (fig. 4). The GES was also frequently isolated from pharyngeal mucus, tonsillar tissue, and occasionally from nasal mucus.

Animals, with one exception, inoculated by routes other than through the oral or nasal cavities did not develop abscesses and the GES could not be recovered from any site in them. The exception was the animal (BL54, table 2) inoculated subcutaneously;

This material is based upon a dissertation submitted to the Graduate College, Iowa State College, Ames, in partial fulfillment of the requirements for the Ph.D. degree. Dr. Collier is now with the School of Veterinary Medicine, Colorado A. & M. College, Fort Collins.

This project was supported, in part, by a grant from the Iowa Cooperative Association, Des Moines.



an abscess developed at the site of injection and the test organism was recovered in pure culture.

The clinical indications of disease and the findings at necropsy were similar in all animals in which abscesses developed.



Fig. 1—Animal showing a lesion on the underline of the throat eight weeks after the group E *Streptococcus* inoculum was fed.

TABLE I—Results of Feeding Culture of Lancefield's Group E Streptococcus to Swine

Pig	Trial	Inoculum per trial	Pyrexia	Leukocytosis	Anorexia and depression	Interval from inoculation to necropsy	Jowl abscesses encountered at necropsy	Test organism from abscess
W52	1	80 ml. of 24 hr. broth culture in feed	+	+	+	30 days	+	+
B52	1		+	+	+	37 days	+	+
R52	1		+	+	+	44 days	+	+
B53	2	100 ml. of 18 hour broth culture in feed	+	+	+	48 hours	—	—
GB53	2		+	+	+	7 days	+	+
W53	2		+	+	+	15 days	+	+
RG53	2		+	+	+	51 days	—	—
BR53	2		+	+	+	51 days	+	+

*Lesions were milium in size.

Some 36 to 96 hours postinoculation, a rapid, high elevation of body temperature occurred (graph 1) with a concurrent, rapid rise in the leukocyte count due, largely, to a marked increase in the numbers of immature neutrophils. The decline of the initial pyrexia, after three or four days, was paralleled by a drop in the leukocyte count. During the first day of the febrile period, the affected pigs showed anorexia and inactivity, but they were usually back on feed a day later and seemed normal until about three weeks later when visible swellings of the pharyngeal region were observed.

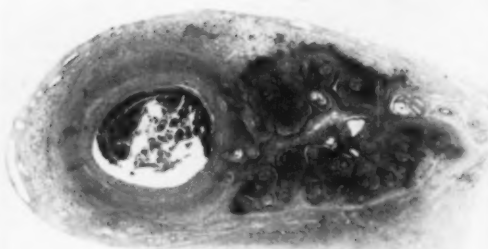
Elevated temperatures and leukocytosis occurred at irregular intervals after the

sixth day postinoculation, but of lesser magnitude than the initial rises and they were not associated with anorexia or inactivity. Palpation of the pharyngeal region sometimes revealed swollen mandibular lymph nodes in 15 days. Superficially located abscesses induced pressure necrosis of the overlying skin during the fifth week.

The animal that was inoculated intravenously was acutely ill for about one week and then recovered without treatment. None of the experimental animals died. They were destroyed at various times for necropsy. At necropsy, they had one or more abscesses within the soft tissues of

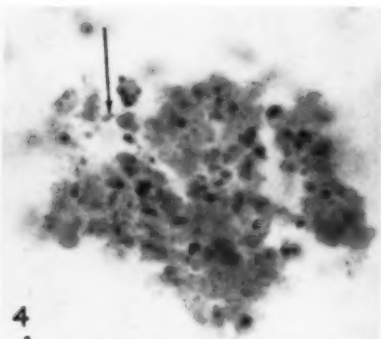
Fig. 2—A ventral view of the involved area of the same animal (shown in fig. 1) reveals three distinct lesions. The lesion on the lower left is draining.





3

Fig. 3—Cross section of a mandibular lymph node showing an abscess. Hematoxylin and eosin stain; x 6.



4

Fig. 4—Photomicrograph of exudate from abscess shown in figure 3. Arrow indicates a short chain of cocci. Gram's stain; x 885.

the pharyngeal region, ranging from less than 1.0 cm. to more than 7.0 cm. in diameter (fig. 3, 5, 6). They were heavily encapsulated and contained a greenish, non-odorous exudate which varied in consistency from thin cream to thick paste. The abscesses induced experimentally were indistinguishable from those which occurred naturally. The smaller lesions (0.2 to 2.0 cm.) were invariably embedded in the lymph nodes of the pharyngeal region. The mandibular lymph nodes were most commonly involved but the retropharyngeal and parotid lymph nodes also frequently contained abscesses.

The pathogenesis of these abscesses was partially defined as a result of necropsy

findings in 3 pigs at 48 hours, seven days, and 15 days postinoculation, respectively. The 48-hour necropsy (B53, table 2) showed only a moderate degree of congestion of the mandibular lymph nodes, and the GES was not recovered from this site. The mandibular lymph nodes at the seven-day necropsy (GB 53) were somewhat turgid, edematous, and contained scattered miliary abscesses that were visible beneath the capsule and on the cut surfaces of the nodes. The test organism was recovered in pure culture from the tiny abscesses.

The swollen, turgid, mandibular lymph nodes could be readily palpated in pig W53, 15 days after inoculation. At necropsy these nodes were involved identically. They



5

Fig. 5—Cross section of a moderate sized, double cavity abscess. The specimen was fixed in 10 per cent formalin solution.



6

Fig. 6—Cross section of a large abscess obtained at necropsy of an animal that was fed the group E *Streptococcus* inoculum four weeks previously. Lesions of this size are common in field cases of the disease.

measured 4.0 cm. by 2.0 cm. by 1.5 cm. The cut surfaces revealed a thickened capsule and multiple abscesses 0.5 to 1.0 cm. in diameter. The GES was recovered in pure culture from these lesions. Interspersed among the abscesses was a matrix of fibrotic tissue and traces of lymphoid tissue.

Postinoculation pyrexia developed regardless of the route of inoculation or the volume of the inoculum (table 2). The onset of this pyrexia varied from five to 60 hours, depending on the route of inoculation. The duration of the initial febrile period varied from 36 hours to eight days. No abscesses developed in the pigs inoculated intravenously, intraperitoneally, intragastrically, or intraenterically.

None of the animals fed broth culture of either *C. pyogenes* or *Past. multocida* developed postinoculation pyrexia or any other signs of disease, and none showed abscesses of the pharyngeal region at necropsy. Postinoculation pyrexia and abscesses did occur, however, in each of 3 pigs that were fed a mixed inoculum consisting of equal parts (100 ml. each) of broth culture of these organisms and the GES. The lesions in these animals were typical of those occurring in animals fed a pure culture inoculum of the GES and the organism was isolated in pure culture from the abscesses.

DISCUSSION

Swine that were fed inoculum containing Lancefield's group E Streptococcus (GES) developed jowl abscesses indistinguishable from those seen in field cases, and the test organism was recovered in pure culture from the lesions. Like results were obtained by intranasal or intrapharyngeal instillation of this organism. Swine fed a pure culture of either *C. pyogenes* or *Past. multocida* did not develop jowl abscesses or other evidence of disease, indicating that

the GES is probably the principal etiological agent and the others only secondary invaders in jowl abscesses.

The fact that jowl abscesses did not develop in swine following the administration of the GES by routes other than those mentioned above, clearly indicates that this organism gains entry to the regional lymph nodes through the mucosa of the pharynx or nasopharynx, perhaps through tonsillar tissue. Repeated isolation of the GES from nasal cavity mucus and from tonsillar tissue indicates that this organism can establish and maintain itself in those areas for an undetermined length of time. The inoculation of animals by the intragastric and intraenteric routes was accomplished in a manner that precluded contamination of the pharyngeal region with the test organism.

The pyrexia and leukocytosis which attend the infection of an animal with the GES suggest that a bacteremia may occur. Failure to recover the test organism from the blood at the height of the initial pyrexia (except in the animal inoculated intravenously) may indicate (1) that bacteremia does not occur in animals infected by avenues other than the intravenous route, or (2) that the methods employed for bacteriological examination of the blood were not adequate. This writer is inclined to believe that the latter may be true.

The recovery of the GES from arterial blood of the intravenously inoculated animal (WSP, table 2) at 30 minutes and 24 hours postinoculation indicates that there was a bacteremia of at least a 24-hour duration. The persistence of the pyrexia for several days in this animal suggests that the bacteremia may have persisted considerably longer than 24 hours. Although no abscesses developed, it can be logically assumed that during the bacteremic stage, numbers of viable streptococci were circu-

TABLE 2—Results of Administration of Group E Streptococcus Culture to Swine by Various Routes

Pig	Amount of inoculum and route of inoculation	Postinoculation pyrexia		Interval from inoculation to necropsy	Throat abscess(es) at necropsy	Abscess(es) elsewhere	Test organism recovered
		Onset	Duration				
WSP	30 ml., i.v.	5 hr.	8 days	16 days	—	—	—
BL54	10 ml., s.c.	5 hr.	96 hr.	22 days	—	+	+
RD54	10 ml., i.p.	5 hr.	96 hr.	20 days	—	—	—
HR54	5 ml., i.ph.	48 hr.	120 hr.	28 days	+	—	+
WH54	1 ml., i.n.	60 hr.	108 hr.	17 days	+	—	+
RM54	10 ml., i.e.	60 hr.	48 hr.	21 days	—	—	—
WF54	10 ml., i.g.	60 hr.	36 hr.	21 days	—	—	—
BT54	10 ml., i.g.	60 hr.	48 hr.	21 days	—	—	—

i.v. = intravenous; s.c. = subcutaneous; i.p. = intraperitoneal; i.ph. = intrapharyngeal; i.n. = intranasal; i.e. = intraenteric; i.g. = intragastric. +From abscess at site of inoculation; +abscess exudate; +tonsillar tissue.

lated through the blood vascular system of the lymph nodes of the pharyngeal region. These findings indicate that the organism gains entrance to the lymph nodes of the pharyngeal region through their afferent lymphatics.

The GES, under field conditions and under experimental condition, induces a lymphadenitis confined to the region anterior to the thoracic inlet. This organism, obviously, can readily invade the pharyngeal region, establish foci of infection in the lymph nodes, and exert a profound pathological effect, but can not withstand passage through the blood stream. In the diseased animal, the infection apparently spreads along the chain of cervical lymph nodes. Viable organisms probably gain entrance to the blood through the lymph stream at intervals during the development of the lymphadenitis. Perhaps the recurrent pyrexia and leukocytosis (graph 1) indicate recurrent instances of extension of the infection through the cervical lymphatics with a transient bacteremia in each instance.

The ease with which swine are infected with the GES, simply by placing the inoculum in their feed, suggests that feed or water contaminated by nasal mucus or abscess exudate from infected swine may be an important method of spreading the etiological agent. It also tends to dispel the widely held belief that trauma of the skin of the pharyngeal region is an essential factor in the development of jowl abscesses.

SUMMARY AND CONCLUSIONS

1) Abscesses of the pharyngeal region were regularly induced in young swine that were fed inoculum consisting of a pure culture of a *beta* hemolytic *Streptococcus* sp. belonging to Lancefield's serological group E.

2) This *Streptococcus* sp. was originally isolated in pure culture from a "jowl" abscess of a young market hog. The gross lesions that developed in the experimental animals were indistinguishable from those seen in field cases.

3) The lesions develop from foci of infection in the lymph nodes of the pharyngeal region; the mandibular lymph nodes are sites of predilection.

4) The group E *Streptococcus* was recovered in pure culture from the abscesses in the experimental animals.

5) Swine that were fed inoculums con-

taining *Corynebacterium pyogenes* or *Pasteurella multocida* failed to develop abscesses.

6) It is concluded (a) that these abscesses are caused by a specific infection (Lancefield's group E *Streptococcus*), (b) that trauma is not essential to the development of the lesions, and (c) that feed and water are likely vehicles of the etiological agent.

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- ¹Collier, J. R.: Swine Jowl Abscesses. *Iowa Vet.*, 25, (1954): 16-18.
²Collier, J. R.: Abscesses of the Pharyngeal Region of Swine—Bacteriological Examination of Exudates. *Am. J. Vet. Res.*, 17, (Oct., 1956): 640-642.
³Newsom, I. E.: Strangles in Hogs. *Vet. Med.*, 37, (1937): 137-138.

"Noah's Ark"—Stories Are Needed

The current television series, "Noah's Ark," is attracting wide attention among television viewers as a show with an entirely new slant in entertainment. It has been referred to as a cross between "Zoo Parade" and "Medic."

Veterinarians, for the most part, recognize the tremendous public relations value of this story in gaining greater public appreciation of the broad aspects and varied interests of veterinary medicine.

It is not intended to be a documentary series, yet some veterinarians have expressed the view that the veterinary material could and should be expanded and improved.

In order to accomplish this, the producers of "Noah's Ark" have asked veterinarians to submit story ideas. To date the response, as indicated in the following letter, has been disappointing:

If you have the space in your next issue, I'll appreciate it if you will run a reminder to your members about submitting story ideas for "Noah's Ark." I really expected to hear from a few of them by now, but have not so far.

Submissions need not be long. They should contain:

Background of case, diagnosis, treatment, after-care, and results. Include any human interest angle in connection with the story. Mention all drugs used in treatment, anesthetic in surgery, etc. Include time of treatment and time of recovery. I will request any additional details needed on a specific story. We will pay \$100 in advance for any idea used as the basis for a script. Further, we will pay \$25 for any brief

incident which can be included in a script. Stories or incidents can be on large or small animals, birds, or fowl. They can be funny, dramatic, or sad.

It should be remembered that we must be able to relate the story to our established characters, with the action taking place primarily in or about the Rinehart-McCann hospital. In addition, occurrences, dialogue, and procedures which are commonplace in a hospital are not all acceptable in the living-room of the average viewer. Bear in mind that we must maintain good taste in this regard.

Our profession is unique in the extent to

which veterinarians continually encounter situations having strong human interest appeal, even though they may not be dramatic in character.

These stories, depicting the "inside story" of veterinary medicine, can become a part of "Noah's Ark," if you will take time to send them to:

Olan Soule, Associate Producer,
"Noah's Ark," Mark VII, Ltd.,
4024 Radford Ave.,
North Hollywood, Calif.

More AVMA Convention Highlights

A total of 2,684 individuals registered their attendance for the Ninety-Third Annual Meeting (Oct. 15-18, 1956) in San Antonio, Texas.

Official Registration Figures

Veterinarians	1,496	(55.7%)
Women	747	(27.8%)
Children	83	(3.1%)
Exhibitor representatives	200	(7.5%)
Students	110	(4.1%)
Guests	48	(1.8%)
Total	2,684	100.0%

Geographic Distribution

TABLE 1—Regional Distribution of Registrants at the San Antonio Meeting, Oct. 15-18, 1956

NORTH ATLANTIC STATES		SOUTH ATLANTIC	
Maine	3	Delaware	8
New Hampshire	5	Dist. of Columbia	36
Vermont	2	Maryland	39
Massachusetts	12	Virginia	25
Rhode Island	3	West Virginia	7
Connecticut	14	North Carolina	23
New York	78	South Carolina	17
New Jersey	28	Georgia	40
Pennsylvania	41	Florida	29
Subtotal	186	Subtotal	224
EAST NORTH CENTRAL		SOUTH CENTRAL	
Ohio	91	Kentucky	21
Indiana	95	Tennessee	24
Illinois	133	Alabama	28
Michigan	60	Mississippi	36
Wisconsin	53	Arkansas	19
Subtotal	432	Louisiana	49
WEST NORTH CENTRAL		Oklahoma	64
Minnesota	52	Texas	819
Iowa	101	Subtotal	1060
Missouri	117	WESTERN	
North Dakota	4	Montana	5
South Dakota	7	Idaho	3
Nebraska	40	Wyoming	10
Kansas	61	Colorado	44
Subtotal	381	New Mexico	23
		Arizona	20
		Utah	14

The five states with the highest number of registrants were Texas, 819; California, 134; Illinois, 133; Missouri, 117; Iowa, 101.

Nevada	5	England	1
Washington	35	Mexico	33
Oregon	15	Holland	2
California	134	Peru	5
Subtotal	308	Sweden	1
OTHER COUNTRIES		Subtotal	93
Canada	35	Grand TOTAL	2,684
U. S. Possessions	16		

Remarks of President Kester After Installation at San Antonio Meeting

Ladies and gentlemen, I am impressed, deeply impressed, by this great honor you have bestowed upon me. To a professional man can come no higher honor.

I prize your confidence and your friendship. But greater still I prize membership in this, the largest, the greatest, and the most progressive veterinary society in the world.

We are moving. You know from what has transpired here at this great convention that we will soon have a new, streamlined Constitution and Bylaws completely compatible with present and future expanding operations.

We will see a stepped-up and expanding public information and education program—limited only by your own individual participation. Public relations is one chore we can not delegate. Your national and state associations can and will carry a good portion but you, as individuals, must carry the load in your respective communities if we are to succeed in our goal of having an informed American public.

We are gathering momentum in veterinary research—although assuredly still not nearly enough. This we must push—not only push—but drive and drive hard.

We are seeing a healthy trend towards more postgraduate training for veterinarians. Also a greater cognizance of veterinary interests and capabilities in areas of the American economy other than agriculture.

We are seeing a rapid strengthening of our constituent associations and a better understanding and wider use of organized veterinary medicine at the grass roots.

Our membership continues to rise. We have



President and Mrs. Wayne O. Kester at the Convention in San Antonio.

topped the 14,000 mark by a good margin, but we are still far short. However, our goal could be reached if each of us here could but solicit just one new member during the year.

Dean Cross, it has been a rare privilege working with you the past year. You have been a great president and a great leader. You have given freely of your time and your energy, and you have left us much in deed and thought.

I am delighted that my good friend, Dean Armistead, has been chosen as our president-elect. I have watched him work and I have worked with him for many years and I assure you that you are fortunate in having him as your team captain in confronting the work ahead.

I am looking forward also with great pleasure to working with all the officers of our Association and of the Women's Auxiliary. We solicit your thoughts, your help, and your advice. This is your Association. We are here but to serve you.

But to get back to San Antonio, hasn't this been a grand meeting? We are here nearly 2,700 strong. We have been entertained, we have learned, and we have profited. Our sincere appreciation to Dr. A. R. Rees and his committee members who have worked so hard and who have so magnificently handled local arrangements. Their deeds have been equalled only by Mrs. Marney and her committee members who have so splendidly taken care of our ladies—true Texas hospitality, all.

And to our headquarters staff from Chicago, who have come here and worked hard to make

this meeting a success, to the many who planned and participated in our scientific programs, to the many hardworking Special and Standing Committee members, to our staunch and loyal exhibitors, and to the press that has treated us so kindly—to all these our sincere thanks and appreciation for a job well done.

It has been my good fortune to become acquainted with many members of our profession in many places and under many circumstances. It has been an inspiring experience. During the past year as I have visited your associations, your schools, and in many of your homes, I could only think then and I can only think now, you are a great people. Ours is a truly great profession—don't ever forget it. I am proud to be of it and to serve it and I am looking forward to this year of service with you with great anticipation.

Dr. Blackstock Honored

One of the special events incident to the San Antonio meeting was the presentation of a framed portrait and plaque by the Southern V.M.A. to Dr. M. R. Blackstock, Spartanburg, S. Car., for "long and meritorious service." The presentation was made by Dr. T. J. Jones, president of the Southern V.M.A., during the "president's night" program at the Coliseum.

Dr. Blackstock is a veteran practitioner, has held all offices in the South Carolina and Southern associations, several offices in the AVMA, and is a long-time member of its House of Representatives. He has also served for several years on the National Board of Veterinary Medical Examiners.

Reports—Group Conferences Held During the AVMA Convention

Conference of Veterinary Parasitologists

The fifth annual conference of veterinary parasitologists was held in the Texas Room of the Gunter Hotel on Oct. 16, 1956, with 19 persons in attendance. The meeting was called to order by the chairman.

The first item of business was on the organization and acceptance of the constitution of the American Association of Veterinary Parasitologists. After considerable discussion, the constitution was adopted with the proviso that those holding a degree in veterinary medicine be members, whereas others in the field of parasitology would be associate members with no vote. They are not accorded the privilege of holding office since this association is an affiliation of the AVMA.

The chair called for election of officers. Dr. Leonard E. Swanson, Florida, was elected president; Dr. F. D. Enzie, Washington, D.C., vice-president; and Dr. Wendell H. Krull, Oklahoma, secretary-treasurer.

The exact status of our association in relation to the AVMA was discussed. It was agreed that the association would have to be considered for

acceptance by the AVMA and that the matter should be taken care of through correspondence between Dr. Swanson and Dr. Kingman.—*L. E. Swanson, Chairman.*

• • •

American Board of Veterinary Public Health

The American Board of Veterinary Public Health met at the Hotel Gunter on October 14 for the conduct of Board business. President H. J. Stafseth presided; there were 18 members present.

The award presented in past years to the veterinary student submitting the best thesis on veterinary public health was ordered discontinued because of lack of interest on the part of students. A substitute program was ordered studied. A committee was created to study "emeritus" status, for members of the Board who have retired from active public health work.

The secretary was instructed to communicate with Civil Service assembly and outline the objectives of the Board with the view of having Board certification accepted by Civil Service commissioners in lieu of examinations.

A citation was ordered drafted for presentation to Mrs. George Grimm, of Ardmore, Pa., recognizing the contributions made by her late husband to the advancement of Veterinary Public Health, especially in the field of milk sanitation.

After the conduct of fiscal business, the meeting was adjourned.—*Martin D. Baum, Secretary.*

• • •

National Board of Veterinary Medical Examiners

The annual meeting of the National Board of Veterinary Medical Examiners was held at 8:00 p.m. on Monday, Oct. 15, 1956, in Parlor B of the Hilton Hotel, San Antonio, Texas. Eighteen of the 30 members of the Board were present or represented by proxies. Several nonmember representatives of state examining boards were also present for part of the meeting.

President C. W. Bower called upon Mr. Chas. B. Frasher, personal consultant of Professional Examination Service, New York, N.Y., who reported on his visits to the schools of veterinary medicine during the past year and his talks to the students on objective examinations for licensure (see the JOURNAL, June 15, 1956, pp. 588-592).

The use of National Board—P.E.S. examinations by a number of state boards for the past three years was reported: in 1954 (the first year offered), three state boards used the objective tests as part of their licensing procedures on 210 candidates; in 1955, eight state boards used the tests on a total of 501 candidates; in 1956, eleven state boards have used the tests on 592 candidates. It was pointed out that more than half of the veterinary graduates seeking licensure in 1956 encountered the National Board—P.E.S. examination in one of the several states.

Dr. Lester Phipps of Minnesota was added to the examination committee of the National Board

which meets annually to revise the examination items, and Dr. Jack Knowles of Florida was named to succeed Dr. C. W. Bower on the committee, Dr. Bower's term on the National Board having expired.

Dr. W. T. S. Thorp of Minnesota was elected president, Dr. J. G. Hardenbergh secretary-treasurer, and Drs. R. E. Rebrassier, H. J. Stafseth, P. G. McKintosh, J. H. Steele, and L. C. Payne members of the executive committee.—*J. G. Hardenbergh, Secretary.*

• • •

American Association of Veterinary Anatomists

The annual meeting of the American Association of Veterinary Anatomists was held on Oct. 16, 1956, in the Bluebonnet Room of the Gunter Hotel, with the president, Dr. J. A. McCurdy, presiding.

Three full members were elected to the Association. They are Drs. G. P. Epling, Colorado; T. W. Jenkins, Michigan; and J. T. Bell, Iowa.

Among the items discussed at the meeting were closed-circuit television in teaching anatomy, AVMA affiliation, and research projects in anatomy at the schools of veterinary medicine.

Several textbooks and laboratory guides for teaching anatomy were reported being prepared by the various schools. Dr. Robert Getty of Iowa reported progress on the revision of Sisson and Grossman's "Anatomy of the Domestic Animals" and stated that any suggestions would be welcomed.

The following officers were installed for 1956-1957: Dr. D. R. Peterson, Oklahoma, president; Dr. Alvin A. Price, Texas, president-elect; Dr. Lois Calhoun, Michigan, secretary-treasurer.—*Alvin A. Price, Retiring Secretary.*

• • •

Conference of State and Federal Veterinarians and National Assembly, Livestock Sanitary Officials

Representatives of the state and federal departments of agriculture met on October 17 in the Gunter Hotel, in a joint session with the National Assembly of Chief Livestock Sanitary Officials, to discuss livestock disease control and eradication problems.

Dr. C. K. Mingle, head of the Brucellosis Eradication Section, Agricultural Research Service, gave a report on the brucellosis eradication program, summarizing the progress since 1935, with particular emphasis on that made since the accelerated program began in November, 1954. He stressed the importance of expanding the brucellosis eradication program on an area basis, pointing out the need for protecting the gains already made.

Dr. R. J. Anderson, chief of the Animal Disease Eradication Branch, ARS, discussed the brucellosis regulations which will become effective Jan. 1, 1957. He explained the procedure that should be followed in entering into a memoran-

dum of understanding and in recommending livestock auction markets and slaughtering plants for specific approval by the chief of the Branch to handle cattle moving interstate in compliance with the new regulations.

Dr. A. G. Boyd, director, Division of Animal Industry of California, gave a resumé of the history of vesicular exanthema in California, pointing out the progress that has been made in spite of the difficulties encountered in attempting to completely eradicate this disease.

Dr. Hadleigh Marsh, state veterinarian of Montana, reported that leptospirosis was recognized as existing in Montana, but he considers the disease self-limiting in character, extending over a period of three to 12 months. The problem of vibriosis in Montana is limited almost entirely to sheep, he reported.

A general discussion of livestock diseases was engaged in by state livestock sanitary officials and federal veterinarians in charge.

The meeting was presided over by Co-chairman C. D. Van Houweling, director of Livestock Regulatory Programs of ARS, Washington, D. C., and C. L. Campbell, state veterinarian of Florida.—*C. D. Van Houweling, Chairman, State and Federal Veterinarians; M. N. Riemenschneider, Secretary, National Assembly Chief Livestock Sanitary Officials.*

American College of Veterinary Pathologists

The American College of Veterinary Pathologists met, on October 17, during the AVMA convention in San Antonio. A business meeting was held to consider routine matters of the organization. A second semiannual meeting was held November 24, in Chicago, in connection with the annual seminar of the College. The subject of this seminar was "The Endocrine System." It was moderated by Dr. D. L. Coffin. Following the business meeting, the Council met to consider applications for the 1956 certifying examination.—*T. C. Jones, Secretary.*

National Association of Federal Veterinarians

Sixty-one members, from 24 states and the District of Columbia, attended the meeting of the National Association of Federal Veterinarians on October 15 in the Hilton-Plaza Hotel.

Two elections were held during the past year for vice-presidents. Dr. T. R. Myers, Bismarck, N. Dak., was elected in zone 4 to fill the unexpired term of Dr. W. H. Hannemann, Kansas City, Kan.; and Dr. J. W. Hovorka, Denver, Colo., was elected for the full regular term of five years in zone 5.

So far in 1956, 191 new members have joined the Association. It is believed this increase in new members is well ahead of our increase in membership for many years. We are particularly pleased to have 39 new members from the Poultry Inspection Division.

The principle discussion of the meeting was centered on what financial assistance the National Association of Federal Veterinarians could give to a worthwhile organization of interest to federal veterinarians, and the unanimous conclusion was reached that it should be a donation to the AVMA research fund. Accordingly, the membership voted to recommend to the executive board of the National Association of Federal Veterinarians that a donation of \$250 be promptly made to the AVMA Research Fund.—*L. T. Hopkins, Secretary.*

Women's Veterinary Medical Association

The Women's Veterinary Medical Association held its tenth annual meeting during the AVMA convention in San Antonio on Oct. 15, 1956. The following new officers were elected: Dr. Louise Lombard, Bethesda, Md., president; Dr. Lois Calhoun, East Lansing, Mich., treasurer; Dr. Marguerite Gulick, Great Barrington, Mass., secretary; Dr. Rebecca Lloyd, Brooklyn, N. Y., eastern vice-president; Dr. Rebecca Taylor, Long Beach, Calif., central vice-president; and Dr. Barbara Boyd, Waynesboro, Va., southern vice-president. Dr. Patricia O'Connor, Staten Island, N. Y., was given the annual award of the Women's Veterinary Medical Association.—*Patricia O'Connor.*

Army and Air Force Veterinary Officers

Approximately 150 Army and Air Force veterinary officers attended the sixth annual meeting of military veterinarians held in conjunction with the Ninety-Third Annual AVMA Meeting, October 16, at the Hilton-Plaza Hotel.

Brigadier General Elmer W. Young, chief, Veterinary Division, Office of the Surgeon General, Department of the Army, opened the meeting with the review of pertinent developments which occurred throughout the past year affecting the military veterinarian. Legislation, past and future, along with the latest developments in research, were discussed in detail.

General Young called on Brig. Gen. Wayne O. Kester, assistant for veterinary services, Office of the Surgeon General, Hq. U.S.A.F.; Brig. Gen. James A. McCallam, U. S. Army, V.C., retired, Washington AVMA representative; Col. Ralph Mohri, Veterinary Division, Office of the Surgeon General, Department of the Army; and Lt. Col. Bernard Trum, U. S. Army, V.C., for short talks and pertinent comments.

The meeting was then open for discussion and all present were called upon for remarks which were of interest to the group.

All veterinary officers, both active and inactive, are cordially invited to attend these annual meetings.—*M. C. Clark.*

American Veterinary Radiology Society

The annual meeting and technical sessions of the American Veterinary Radiology Society at the Hilton-Plaza Hotel, San Antonio, on Oct., 16, 1956, was well attended. The teaching of radiology in



A buffet supper was held in the restored La Villita (little village) during the AVMA Convention in San Antonio. La Villita, in the heart of downtown San Antonio, is the site of the original Indian, then Spanish, village.



veterinary schools was discussed by Dr. N. B. Tenille in a paper which was read in his absence. Particular attention was given to the need for advanced training centers. Dr. Hage was unable to be present because of illness and his paper on chest radiography was missed.

Dr. J. J. Fishler presented an interesting series of proved cases of mycotic diseases as they are demonstrated in the radiograph. The thought was offered that x-ray demonstration of the mycotic diseases was beneficial in providing a key for the group. Individual identity was not possible by means of x-ray films alone. Malignant neoplasm demonstration by means of radiographs was discussed by Dr. E. G. Trigg of Tuskegee Institute who presented a well-documented case.

Dr. Ruskin C. Norman (M.D.), of San Antonio, was available throughout the meeting and brought up many points of interest from the standpoint of comparative radiology. The use of radioactive phosphorus as an experimental technique in measurement of response to follicle-stimulating hormone was presented by Dr. F. A. Spurrell. This method provides a sensitive and reproducible measurement with a single injection of hormone and radioactive phosphorus.

Dr. R. E. Norton, Pharr, Texas, presented an interesting discussion on the utilization of ultrasonic treatment in lameness in horses. Dr. Norton and his colleagues felt that this method offered promise of good results in many instances and that evaluation by various research institutions should be accelerated.—*Francis A. Spurrell, Secretary.*

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The American Association of Equine Practitioners

This organization sponsored an initial conference for AVMA members interested in equine practice.

There were 34 veterinarians present, representing all sections of the United States, Canada, and Sweden. Since many of those present were not members of the A.A.E.P., most of the time was spent in presenting a brief history of the association, its objectives, and need for active support.

It is hoped that an informal program can be arranged for conferences at subsequent meetings of the AVMA, with perhaps one or more practical subjects assigned to discussion leaders. All those interested in such conferences are invited to make suggestions relative to subjects that are of most interest to them.—*W. F. Guard, President.*

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Conference of Editors

The conference of Editors was held on Monday evening, in the Walnut room of the Hilton-Plaza Hotel with about 50 in attendance.

Dr. W. H. Riser spoke on methods of preparing radiographs and photographs for use as illustrations for published articles. Mrs. Helen Bayless

discussed the different ways the names of trade and economical management of a large dog colony.

marked and registered drugs may be printed in journals and books. This was followed by discussion of the proper methods of organizing manuscript material and of common errors in the use of specific medical terms. There was a lively discussion by the entire group on all of these subjects.—*W. A. Aitken, Chairman.*

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Association of Deans of Veterinary Colleges

President E. E. Leasure presided at the annual meeting of Deans of Veterinary Colleges which was attended by the deans or their representatives of 17 of the 19 schools. Deans E. C. Stone and R. S. Sugg were unable to attend because of serious illness, from which both are recovering satisfactorily. Drs. C. D. Van Houweling and Robert Getty reported on the activities of the AVMA Committee on Motion Pictures and Television as they affect education. Michigan State is presently using closed-circuit television in teaching two courses. Dr. Van Houweling also discussed federal accrediting of veterinarians.

Dean I. A. Merchant reported on his recent visit to several South American schools. Other speakers included Deans C. F. Clark, C. A. Brandly, D. E. Jasper, T. L. Jones, E. E. Leasure, and T. J. Jones.

The officers were re-elected.—*A. H. Groth, Secretary.*

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Veterinary Nutritionists

The American Association of Veterinary Nutritionists was organized at San Antonio, Texas, on Oct. 16, 1956. A group of 37 veterinarians adopted a constitution and elected officers. Dr. M. Erdheim, Chicago, Ill., is the first president; Dr. R. E. Lubbehusen, St. Louis, Mo., president-elect; and Dr. R. C. Klussendorf, Terre Haute, Ind., is secretary-treasurer.

Membership in A.A.V.N. is open to every veterinarian who is a member of the AVMA. Already, more than 120 have expressed interest and signified intention of affiliating with the group.

Contact has been established with the Nutrition Council of the American Feed Manufacturers Association, and the two groups plan to work cooperatively. The first project will be the preparation of a handbook listing the medicating agents which, under approval of the Food and Drug Administration, may be added to feeds, and the levels of medication permitted.—*R. C. Klussendorf, Secretary.*

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Veterinary Care of Laboratory Animals

The annual meeting of the Committee on Veterinary Care of Laboratory Animals was held in the Gunter Hotel on October 14, with 40 veterinarians interested in the care and maintenance of laboratory animals used in research in attendance.

Dr. Carl F. Schlottbauer, of the Mayo Foundation for Medical Education and Research, presented a paper on "Care and Housing of Dogs Used in Research." He discussed disease control

A paper on "Diarrhea of Infant Mice" was given by Dr. Lisbeth M. Kraft, New York University, Bellevue Medical Center. "Care and Conditioning Monkeys for Use in the National Institutes of Health" was the subject of a paper delivered by Dr. William I. Gay. This was followed by a film and a discussion on "Disease-Free Animal Colonies," by Col. Maurice W. Hale, Walter Reed Army Medical Center.

An organizing committee of the American Board of Laboratory Animal Medicine has been formed, and a copy of the constitution of this proposed specialty board has been submitted to the AVMA office for comment.—*R. J. Young, Session Chairman.*

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New Officers of Veterinary Exhibitors Association

Following are the new officers of the American Veterinary Exhibitors Association, Inc., elected during the Association's meeting in San Antonio:

President—Mr. B. L. Hill, Merck Sharp and Dohme; vice president—Dr. J. D. Fortenberry, Haver Lockhart, Inc.; secretary-treasurer—Mr. D. M. Nicholson, Nicholson Manufacturing Co.; executive committee—the three foregoing officers and Dr. Carl J. Norden, Jr., Norden Laboratories, and Mr. Roy Connor, Schering Corporation. Advisory trustees are Mr. C. M. McCallister, Jensen-Salsbery Laboratories, Inc., and Dr. Robert H. Hollis, Abbott Laboratories.

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Industrial Veterinarians Association

The annual meeting of the Industrial Veterinarians Association was held at the Gunter Hotel on October 15, with more than 40 in attendance.

Drs. Rolland A. Gessert and Charles G. Durbin, of the Food and Drug Administration, presented a paper prepared by Dr. J. H. Collins on "Relationship of Food and Drug Administration to New Drug Applications and Processing." A lively discussion followed. Dr. D. D. Ogilvie, Imperial Chemical Industries, spoke on "New Developments in the Chemical Field and Their Contributions to Agriculture."

The new officers are: president, Dr. Robert McCarty, Wyeth Laboratories; president-elect, Dr. R. A. Huebner, Wyeth Laboratories; secretary, Dr. Bernard LaSalle, Arnold Laboratories; treasurer, Dr. Maynard Curtis, Curtis Laboratories. The executive board members are: chairman, the immediate past-president, Dr. Mark Welsh, American Cyanamide Co.; Dr. L. W. Price, Lederle Laboratories; Dr. Don Rankin, New Brunswick, N. J.; and the president and president-elect.

Veterinarians associated with industry are invited to contact the secretary for copies of the constitution of the I.V.A. and the proposed agenda for the next meeting which will be held in Cleveland during the 1957 AVMA Convention.—*Bernard LaSalle, Secretary.*

Alumni Meetings, San Antonio—October 17

Alabama Polytechnic Institute

Approximately 65 people attended the A.P.I. alumni dinner at the Gunter Hotel. Dr. Tom Guyton ('49), of San Antonio, was responsible for the arrangements, and Dr. W. W. Putney ('45), of North Hollywood, Calif., served as master of ceremonies. Drs. J. E. Greene and W. S. Bailey discussed the recent improvements on the A.P.I. campus and changes on the staff of the School of Veterinary Medicine.

A long-distance telephone call was made to Dean R. S. Sugg (who had just returned home from the hospital following minor surgery) to extend birthday greetings and best wishes for a speedy recovery.

Dr. Putney, who has been instrumental in the development of the television series "Noah's Ark," had as his guest Mr. Olan Soule, associate producer of the Mark VII program, who commented briefly about the production of the series. Dr. Putney also discussed activities of the Southern California Veterinary Medical Association, of which he is president.—*W. S. Bailey.*

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Iowa State College

The Iowa State College alumni banquet was held in the Hotel Hilton-Plaza with 110 alumni and their wives in attendance. Dr. Russell J. Beamer ('40), College Station, Texas, was master of ceremonies.

Dean I. A. Merchant gave a resumé of the activities of the School of Veterinary Medicine, including information about the student body and the problems of selecting a new class, professors who have resigned, new faculty appointments, and a description of the new laboratory. Since there was considerable interest in the forthcoming construction of the Federal Animal Disease Research Laboratory, he also explained the procedure by which Ames was selected as a site and told how the College will cooperate with this laboratory in carrying out its research program.

After the meeting was adjourned, those in attendance joined the Texas group in additional festivities.—*I. A. Merchant.*

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Kansas State College

The Kansas State College alumni dinner was held in the Anacacah Dining Room of the St. Anthony Hotel with 166 alumni and their wives in attendance. Dean E. E. Leasure, who presided, welcomed the group, called for a roll call, and gave a short resumé of the happenings in the School and on the campus during the past year.

President-elect Brig. Gen. W. O. Kester ('31) and Brig. Gen. E. W. Young ('25) spoke briefly. Mr. Ernie Barrett, assistant secretary of the Kansas State College Alumni Association, discussed the athletic and alumni programs at Kansas State.

Colonel Burt English ('40), U.S.A.F., Randolph Air Force Base, was responsible for the dinner

arrangements. Following the dinner, the group accepted the invitation of the Texas alumni to join them at the LaVillita Club for a fine evening of entertainment and dancing.—*E. E. Leasure.*

Michigan State University

The Michigan State University alumni met at the Hotel St. Anthony with 54 alumni and their wives in attendance.

Dean C. F. Clark reviewed matters of interest at Michigan State relative to the building program in progress, enrollments, development of new colleges, and staff changes. Those in attendance signed a greeting to Dr. E. K. Sales ('16), hospitalized at the time of the banquet, expressing their good wishes for a speedy recovery.—*C. F. Clark.*

University of Missouri

The University of Missouri alumni dinner was held at the Gunter Hotel with 27 persons present. Lieutenant Robert E. Pope ('55) welcomed the group and called on each alumnus for a brief report. Dr. C. E. Murphy ('52) gave an interesting account of two years of service in Ethiopia and visits to several European veterinary medical schools.

Dean Groth and other faculty members reported on developments on the campus, with special emphasis on the new hospital buildings for which funds have been appropriated. Dr. and Mrs. J. S. Matteson (MSU '25), of Grant City, Mo., were guests.—*A. H. Groth.*

Cornell University

About 50 alumni of the New York State Veterinary College and their wives enjoyed a dinner meeting at the St. Anthony Hotel. Dr. H. G. Hodges ('16) was the chairman. Dr. Robert Kirk ('46) spoke on the happenings in Ithaca, including the progress on the new veterinary buildings. The group of alumni extended congratulations to Dr. H. L. Gilman ('17), professor of bacteriology, who received the Borden Award, and to Col. Robert Foster ('02), who was recipient of the AVMA Award for outstanding service. Another army veterinarian worthy of alumni recognition was Col. Burt English ('02).—*S. J. Roberts.*

Ohio State University

A total of 160 people, the second largest of the convention attended the Ohio State alumni dinner held in San Antonio, Oct. 17, 1956. Dr. John Delaplane ('29) chairman of the Department of Bacteriology, Texas A. & M. College, served as chairman of the meeting. He introduced Assistant Dean R. E. Rebrassier who reported on the new building program at Ohio State University, faculty personnel, student enrollment, and the general plans for the future. A number of distinguished guests were introduced.

Considerable interest and enthusiasm was expressed relative to the new president, Novice

Fawcett, the general building program, and the athletic accomplishments of the University. Following the singing of "Carmen Ohio," the meeting adjourned to the La Villita for entertainment and dancing.—*R. E. Rebrassier Assistant Dean.*

Oklahoma A. & M. College

Four loyal alumni visited informally after first meeting with groups from other schools.

The alumni were interested in a report from Dean Glenn C. Holm on the plans and dates for the erection of the two new wings of the veterinary building, and on staff additions and budget planning. The expanded research program was discussed and brought favorable comment.—*Glenn C. Holm.*

Ontario Veterinary College

The Ontario Veterinary College alumni dinner was held at the Hilton-Plaza Hotel with 60 persons present. Lieutenant Colonel K. Burns ('40) of Fort Sam Houston, Texas, acted as chairman.

Colonel Burns called on Principal T. Lloyd Jones to report to those present on the activities at the College. In his remarks, Dr. Jones made particular reference to three developments: (1) the establishment of an advisory committee for the Ontario Veterinary College, (2) the construction of a new clinic building which has just begun, and (3) plans for a new Department of Veterinary Research which will come into being during the next fiscal year. Colonel Burns then called on several alumni for remarks. The dinner was a highly successful affair.—*T. Lloyd Jones.*

University of Pennsylvania

Approximately 51 alumni and guests attended the alumni banquet in the Gunter Hotel. A touch of Old Mexico was injected into the festivities by the music and songs of the Two Caballeros and their guitars.

Among those present were Mrs. A. E. Coombs, president of the AVMA Women's Auxiliary; Dr. J. G. Hardenbergh ('16), executive secretary of the AVMA; Gen. J. A. McCallam ('17), past president; Drs. Joseph Arburua (SF '15) and S. Scheidy ('29), of the AVMA Executive Board; and Dean Mark Allam, newly elected vice-president, who presented a verbal picture of the school's activities.

The meeting was presided over by Alumni President F. Murray Iobst ('43) and was followed by the convention party and dance at LaVillita.—*F. Murray Iobst.*

Texas A. & M. College

The Texas A & M Veterinary Alumni meeting was held in San Antonio at LaVillita, a picturesque "Old Mexico" village, on Wednesday, October 17. Those in attendance were seated by classes at tables around the patio and a fine barbecued chicken dinner was served. The program was limited to music and a Spanish-theme floor show,

to which all other alumni parties were invited to come following their respective dinners. About 350 Texas alumni attended and were joined for enjoyment of the floor show and dancing by approximately 600 veterinarians and their wives from the other alumni groups.—*W. W. Armistead.*

State College of Washington

More than 60 people, including alumni and their wives, attended the Washington State College Alumni dinner at the Gunter Hotel. In the absence of Dean E. C. Stone, Dean Emeritus E. E. Wegner presided as chairman. Each alumnus was called upon to indicate the particular phase of the veterinary profession in which he was engaged. In addition, many recalled interesting experiences of undergraduate times.

Dr. J. A. McCurdy, representing Dean Stone and the faculty at W. S. C., brought news of Dr. Stone's illness and encouraging word of his continued improvement. Also, the present status of the clinic building program was explained and other items of interest about the college were presented.—*Ruth E. Jerrett, Secretary to the Dean.*

The Adjourned Session in Mexico City

A group of more than 150 veterinarians and their wives joined in the postconvention tour to Mexico City following the San Antonio meeting and attended the Adjourned Session at the National Autonomous University of Mexico on Saturday, October 20; this was held in the auditorium of the School of Science in beautiful University City after the tour group had inspected the fine new building of the school of veterinary medicine.

A number of prominent veterinarians and other distinguished persons and their wives from Mexico also attended the adjourned session program. Among those who took part in these exercises and made brief addresses of welcome and response were: Dr. Eلفren C. Del Pozo, secretary general of the university; Dr. Floyd Cross, AVMA president; Dr. Oscar Valdes Ornelas, director of the veterinary school; Dr. Alfonso Alexander, president of the Mexican College of Veterinarians; Brig. Gen. Wayne O. Kester, AVMA president-elect; Col. Manuel Cabrera Valtierra, Chief of the Mexican Army Veterinary Corps; Dr. Fernando Camargo,



The Science Building at the University of Mexico, Mexico City, where the Adjourned Session of the Convention was held.



The Participants of the Adjourned Session of the

Left to right—Mrs. A. E. Coombs, President, AVMA Women's Auxiliary; Mrs. Oscar Valdez Ornelas, President, Women's Auxiliary of Mexico; Colonel Manuel Cabrera Valtierra, Chief of the Mexican Army Veterinary Corps; Brig. General Wayne O. Kester, Incoming AVMA President.

director of the animal disease laboratory at Palo Alto; Dr. Joseph M. Arburua, AVMA Executive Board chairman; Dr. (and Deputy) Jesus Madrigal Yanez, president of the Mexican Association of Veterinarians; Dr. Gabriel Atristain; Lieutenant Colonel Roberto Alvarez Ruiz, vice-president of the Mexican College of Veterinarians; Dr. Juan Gomez Pizana, dean of the Mexico veterinary medi-

cal school; Dr. Carlos Scheelebach; Dr. Pablo Sirol.

After the program, the entire group was entertained at a buffet. Later in the day, the group returned to the Hotel Del Prado where a reception and dinner was held in the evening.

During the following week, the tour groups were on sightseeing trips in Mexico City and environs, including Xochimilco, cattle and dairy

A View of Part of the Group Which Attended the Adjourned Session in Mexico City





Convention Held October 20, 1956, in Mexico City

Left to right—Dr. Joseph M. Arburua, Chairman, AVMA Executive Board; Dr. Alfonso Alexander, President, Mexican College of Veterinarians; Dr. Elfred C. del Pozo, General Secretary of the University of Mexico; Dr. Floyd Cross, Retiring AVMA President; Dr. Oscar Valdez Ornelas, Director, School of Veterinary Medicine, University of Mexico; Lt. Colonel Roberto Alvarez Ruiz, Vice-President, Mexican College of Veterinarians.

ranches, Cuernavaca, Taxco, and other points of interest. Part of the group went on to Acapulco, final return to the States being made on the night of October 27.

Nearly 100 veterinarians and their wives who

attended the San Antonio convention took part in a preconvention visit to renowned King Ranch, Kingsville, Texas, where Dr. J. K. Northway and his staff put on an especially interesting program and entertained in true Texas style and hospitality.

In Mexico City at the Adjourned Session of the AVMA Convention



Left to right—Dr. Alfonso Alexander, Dr. Jos. M. Arburua, Dr. Floyd Cross, Brig. General Wayne O. Kester, Dr. J. G. Hardenbergh, Executive Secretary of the AVMA, and Senator Dr. Jose Figueroa.

An Improved Technique for Enucleation of the Bovine Eye

R. L. LUNDVALL, D.V.M., M.S., and H. D. SIMPSON, D.V.M., M.S.

Ames, Iowa

ENUCLEATION of the eye in the ox is indicated in a number of conditions, especially in the surgical treatment of carcinoma of the eye and associated structures. The techniques that have previously been used leave much to be desired. The hemorrhage is generally profuse from the onset of surgery, obscuring the surgical field and, in most instances, a pack is required to control hemorrhage which follows the surgery. The pack, a foreign body, delays healing and when it is removed, the cavity fills slowly with granulation tissue, often with much suppuration. The technique originally developed* for enucleation of the canine eye has been adapted, with some modification, for use in cattle.

OPERATIVE TECHNIQUE

Anesthesia is obtained by using a 6-inch, slightly curved needle which is inserted through the skin and deeper tissues. When the point strikes the floor of the pterygopalatine fossa, about 20 cc. of a 2 per cent solution of procaine hydrochloride is deposited, anesthetizing the oculomotor, trochlear, abducens, ophthalmic, and maxillary nerves. The upper eyelid is anesthetized by a subcutaneous injection of 10 cc. of this solution along the zygomatic arch, blocking the auriculopalpebral branch of the facial nerve. Approximately ten minutes are then allowed to elapse before surgery is started.

The globe (eyeball) is expressed between the eyelids by using digital pressure applied to the lateral and medial aspect of the upper eyelid, at about the 10- and the 2-o'clock positions. The pressure should be firm and the fingers should press the eyelid deeply between the bony orbit and the globe. In most cases, this will force the globe between the eyelids. If necessary, the lateral canthus is slit for $\frac{1}{2}$ inch with a pair of sharp-pointed scissors to allow the globe to be expressed. The globe will usually remain outside the lids after once being expressed, but in some cases it is necessary to hold it out with towel forceps embedded deeply into the sclera.

The conjunctiva is picked up at the center of the upper fornix conjunctivae with a pair of thumb forceps. The conjunctiva and Tenon's capsule are then penetrated close to the dorsal aspect of the globe with a pair of curved, sharp-pointed scissors. The scissors are inserted with their concave surface in apposition to the globe through the conjunctiva and Tenon's capsule. The scissors are then opened widely to further enlarge the opening which is made close to the scleroconjunctival junction.

A pair of acutely curved, eye-enucleation scissors is then introduced through the opening in the conjunctiva and Tenon's capsule and the muscles of the eye, conjunctiva, Tenon's capsule, and the optic cord are severed as close to their scleral attachments as possible. The dorsal straight muscles, rectus dorsalis s. superior, are severed first, followed by the rectus lateralis, the rectus medialis, and the obliquus dorsalis s. superior. The retractor oculi muscle and the optic nerve are then cut. The globe is then pulled downward and outward, and the ventral straight muscles, rectus ventralis s. inferior, and the ventral oblique muscle, obliquus ventralis s. inferior, are severed. The remaining lower portion of the conjunctiva and Tenon's capsule is then cut free, and the globe is removed.

The eyelids and associated tarsal and lacrimal glands and the membrana nictitans are removed along with the remaining portion of the palpebral conjunctiva. To do this, a scalpel is used to make an incision through the skin around the palpebral orifice, approximately $\frac{3}{4}$ inch from the edges of the lids. Then, using a pair of sharp-pointed scissors, the remaining portion of the conjunctiva and Tenon's capsule, the membrana nictitans, and the lacrimal glands are removed along with the edges of the lids and the tarsal glands. It is important not to penetrate the orbit any deeper than necessary in removing these structures.

Control the hemorrhage, if it is severe, by applying a gauze pack firmly in the orbital cavity for five to ten minutes. Then draw the cut edges of the lids together with

Drs. Lundvall and Simpson are assistant professors in the School of Veterinary Medicine, Iowa State College, Ames.

*By Dr. Simpson.

interrupted or continuous sutures of braided nylon. No pack is used in the cavity. The sutures are removed in ten to 12 days. The edges of the lids usually heal by primary union. When an infection has been present prior to surgery, it may be necessary to remove one or two sutures at the medial canthus of the eye about the fourth postoperative day for drainage.

If the eyeball has collapsed, some modification of the technique is necessary. In such cases, the eyeball can not be expressed. Instead, after anesthesia, traction is applied to the remnant of the eyeball, and the procedure outlined above is followed as closely as is possible.

RESULTS AND CONCLUSIONS

This method has been used in 21 cattle with uniformly good results in 20. The one exception was a Hereford cow in which a previous attempt at enucleation had left the eyeball collapsed. In this animal, healing was slow, requiring approximately 40 days. In the other 20 animals, primary union of the cut edges of the eyelids was usually obtained. The animals were discharged from the clinic ten to 14 days following surgery. In no instance was it necessary to suture a pack into the orbit to control hemorrhage.

Hemorrhage during and following surgery is minimal since the arteries and veins near the globe are small compared with their size further back in the orbit. The surgical field is, therefore, almost free of blood for most of the surgical procedure. By dispensing with the pack, faster healing is attained.

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Feline Monstrosities

IRA PAUL ANTIN, D.V.M.

New York, New York

Teratology, the science of malformations, has little practical value in veterinary medicine yet, for the records, these unusual occurrences should not be completely overlooked.

The following account is of two such cases:

The first was a case of posterior twinning in the fetus of a domestic cat. This cat, 7 years old, was brought to the clinic

From the Ellin Prince Speyer Animal Hospital, New York, N. Y.



Fig. 1 (Top)—Posterior twinning in a cat—one head, two trunks (abdomen), and two sets of pelvic limbs. Fig. 2 (Bottom)—Radiograph of feline twin monster (fig. 1) showing a single head, two spinal columns, and accompanying bodies.

after laboring for 30 hours. Upon cesareotomy, under ether anesthesia, the right uterine horn was found to contain a fetus with one head, one set of thoracic limbs, and two sets of pelvic limbs with some doubling of the trunk (fig. 1,2). This double monster is classified as a dipygus, a monster with a double pelvis.

The second was a case of twinning in the cephalic region without complete separation of the heads.

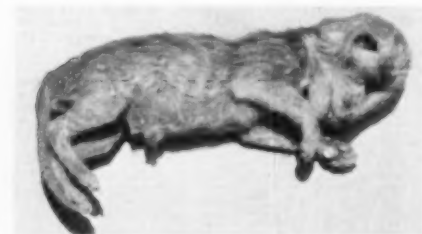


Fig. 3—Anterior twinning in a cat.

The kitten was brought to the clinic after birth. It had a double face, three eyes, two ears, and two mouths (fig. 3); a condition termed "diprosopus."

Such monsters develop from a single ovum. They are the product of an incomplete twinning.

ADDENDUM

According to Arey (Developmental Anatomy by L. B. Arey, W. B. Saunders Co., Philadelphia, Pa., 1924), the frequency of multiple births in man varies considerably in different countries and races. Twins occur among American whites once in 87 confinements; triplets 1: (87)² or 1: 7,569, and quadruplets 1: (87)³. Six appears to be the maximum number of simultaneous births that is well authenticated.

The simultaneous birth of 2 or more infants (fraternal twins, etc.) is most commonly due to the development of a corresponding number of eggs, discharged from separate follicles, fertilized by different sperms and implanted in the uterus within individual chorions.

Quite different are the true or identical twins which are always of the same sex and so strikingly similar in physical, physiological, and mental traits that only rarely is their identification, as identical twins, difficult. Because they develop from a single blastocyst, human identical twins are contained within a common chorionic sac and

have a common placenta. The umbilical cords are, however, usually separate and the same is true of the amnions.

Conjoined and Identical Twins

Double monsters, conjoined twins, and identical twins are believed to represent differing degrees of splitting of the zygote. Statistics compiled from practicing veterinarians in Austria indicated that 1 bovine fetus in 100,000 was a double monster. Only in recent years have identical twins in cattle received attention.

Investigations indicate that in cows with twin embryos, a single corpus luteum is found in 1.2 per cent. Another study shows that 5 per cent of twin calves born are probably identical. Thus, if 1 per cent of bovine births are twins, the above figures would indicate, respectively, that identical twins would occur in 1 in 8,333 or 1 in 2,000 births. In man, 40 per cent of twins are monozygous.

Monozygous bovine twins are of like sex and conformation with the same basic body colors, which are usually arranged in a strikingly similar pattern. The disposition of the hair tufts at the tail head is a useful criterion in determining identical twins, but muzzle prints are not altogether reliable.

Double monsters occur most frequently in cattle but are found, occasionally, in the sheep, pig, dog, and cat; rarely in the horse. Although identical twins are recognized almost solely in cattle, if a search were made they might also be found in the other species. Recently, in a ewe, 2 fetuses shared a common chorion with a single corpus luteum in the ovary on that side; a third fetus and a corpus luteum were found in the opposite side. Identical twins would be difficult to recognize in litters, especially in pigs of solid colors.

Twinning in cattle, whether fraternal or identical, is in general undesirable. It is often associated with an abbreviated gestation; dystocia, either from uterine inertia due to overstretching or from simultaneous presentation; and with subinvolution, retention of the fetal membranes, and metritis.—G. H. Arthur, in *Vet. Rec.*, June 23, 1956.

Bovine Monozygous Twins.—In dairy cattle, it is estimated that 10 per cent of twins of the same sex are monozygous and,

since an equal number of twins are of different sex, about 5 per cent of all twin calves may be identical. A case in an Ayrshire cow pregnant 61 days is described. The corpus luteum of pregnancy was in the left ovary but the single chorion occupied both uterine horns, most of it in the left horn. It was 76 cm. long and contained 2 fetuses 6 cm. long. Injections at opposite ends of the chorion with different dyes showed that each fetus had its separate allantois which overlapped at the middle of the chorion. The main allantoic blood vessels had not anastomosed.—*G. H. Arthur in Vet. Rec., Sept. 22, 1956.*

Twinning in Dairy Cows

A Holstein-Friesian cow had twins in five consecutive years. The first and fourth pairs were heifers (all of which are breeding), the second pair was bulls, and the third and fifth pairs were a bull and a heifer. They were not all by the same sire.

Two other highly productive cows are mentioned: a Brown Swiss that, after having 2 single calves, had 8 calves in four calvings, including twins twice and triplets once; and a purebred Holstein-Friesian that had 9 calves in three calvings within 24 months—twins, quadruplets, and triplets.—*Hoard's Dairyman, Sept. 10, 1956.*

Mortality in Twin Pregnancies.—In a 14-year study, in Great Britain, the stillbirth rates per 1,000 single and twin human pregnancies were 24.5 and 45.4, respectively; the death rate during the first week, 15.2 and 122.2, respectively. The excess mortality in twins is chiefly due to the greater incidence of small babies. The premature onset of labor for twins is unexplained. The incidence of twinning may be correlated with the state of nutrition of the mother "similar to that demonstrated in lower animals."—*J. Am. M. A., July 21, 1956.*

A Practical Use of Oxytocin in Sows.—The use of oxytocin in sows to initiate and speed up farrowing so it will be completed in daytime is suggested. At the University of Missouri, 84 per cent of the sows with milk in their teats started farrowing an average of 3.5 hours after the injection and finished in 2.2 hours, whereas untreated sows required 3.3 hours.—*Successful Farming, Sept., 1956.*

Research with Identical Twin Calves

Identical twin calves may have minor differences. Guernsey or other spotted calves need not have the same size and location of white spots but the color shades, shapes of head, ears, tail, and many other points are identical. Under the same conditions, identical cows give the same amount of milk with the same content of protein and fat and have similar lactation periods. They have the same temperament and graze and loaf together. When raised separately and later turned into the same herd, they will usually seek each other's company.

At the University of Tennessee, when 1 of several pairs was raised on a normal ration, the other on a full feed of grain, the latter at 2 years of age averaged 150 lb. heavier than their mates but gave only 44 per cent as much milk. Their udders appeared similar but thick layers of fat had prevented the development of gland tissue.

In New Zealand, when 1 of each pair was on a maintenance ration for ten weeks before calving, while the other was fed to make a normal gain, the latter averaged 1,057 lb. more milk during the first lactation. When twin bulls were fed differently, the well-fed group produced more semen but the difference in quality and fertility was slight. Many other interesting experiments are in progress.—*Guernsey Breeders' J., Oct. 15, 1956.*

Menstruation in Monkeys Modified by Reserpine.—Since reserpine modified the estrous cycle and inhibited ovulation in female rats, it was tested in Rhesus monkeys. When 6 mature females were given 1 mg./kg. daily for eight to 100 days, menstruation was suppressed and, as revealed by laparotomy, ovulation did not occur in those treated for 100 days. Normal estrous cycles were re-established promptly when the drug was withdrawn. During the test, the monkeys maintained normal body weight and fur growth.—*Science, Oct. 19, 1956.*

Methionine Aids Wound Healing.—When rats were maintained on a protein-poor diet, wound healing was retarded; the accumulation of mucopolysaccharides was decreased, and collagen synthesis was retarded. When methionine was added to the protein-poor diet, healing was restored to nearly normal.—*J. Am. M. A., Aug. 4, 1956.*

A Review of Canine Artificial Insemination

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THE FIRST recorded instance of artificial insemination in the bitch was in 1780, when Spallanzani successfully inseminated a "Barbet" bitch with 19 gr. of seminal fluid by means of a small syringe. Sixty-two days later, she whelped 3 puppies—2 males and 1 female.

In 1782, Iossi repeated this experiment successfully, the bitch whelping 4 puppies after a 62-day pregnancy.

There is no further reference to artificial insemination of the bitch until about 1884, when a series of experiments was carried out by Sir Everett Millais. He recorded how he successfully used artificial insemination to produce puppies and, to prove his point, breeds such as Bloodhounds and Basset Hounds were crossed.¹

This early work was of an exploratory nature, and only since 1940 has artificial insemination been practiced in order to effect matings that would otherwise have been impossible.

In most cases, the semen was collected by digital manipulation or by collecting it from the vagina of a bitch immediately after she had been served. In more recent years, an artificial vagina has been used, and an Italian worker² was apparently the first investigator to use this device for the collection of canine semen.

A modified artificial vagina for swine and a modification of a Cambridge pattern artificial vagina for sheep were both successfully used by workers in 1934³ and 1949.⁴ However, these investigators appear to have employed a bitch in estrus as a "teaser" at the time of collection.

On the study of the semen, little work has been recorded. From the combined work of several investigators⁵⁻⁸ we learn that the color of dog semen varies from light gray to milky and its consistency is usually watery. Several have reported that the semen consists of three fractions. The volume appears to vary from 1 to 30 ml., and the density from 6,000,000 to 588,000,000 sperm per milliliter.

The dilution and preservation of dog semen had received little attention. It was found, in 1933,⁹ that normal dog semen had a survival time of 21 hours and that dilution with canine blood serum, dextrose solution, and sodium phosphate buffer all had an unfavorable influence on it. The keeping of quality of canine semen was little affected by the addition of egg yolk.¹⁰ The most valuable recorded work on the dilution and preser-

vation of dog semen was reported, in 1952, by French workers¹¹ who found, by using the second or sperm-bearing fraction only, that when kept in a hypotonic 2.7 per cent sodium citrate-egg yolk or in isotonic egg yolk-fructose, the semen would show microscopically a 50 per cent motility after four days.

Studies on this subject were, therefore, commenced at the Royal Veterinary College, London, early in 1953.

OBSERVATIONS ON CANINE SEMEN

Before making any attempts at artificial insemination in the dog, it was obvious that a study of canine semen would have to be undertaken and, in order to perform experiments, a hygienic method of collection had to be devised. Digital manipulation was abandoned on esthetic grounds and while various artificial vaginas were partially successful, they did not quite meet requirements; the primary deficiency was lack of physical sensation to the dog. In view of the shortcomings of existing artificial vaginas, a new type was developed which has proved highly successful (fig. 1, 2). It can be adapted for any size dog and, because of its design, does away with the need for a teaser bitch.¹²

Many samples of semen from a variety of breeds resulted in the following averages: volume, 1 to 25 ml.; density, 4,000,000 to 540,000,000 sperm per milliliter; and pH, 5.8 to 6.9 (av. 6.75).

The description of a semen sample being composed of three fractions was confirmed; the second fraction is the only one that is sperm-bearing. All these fractions can be successfully isolated.¹³

PRESERVATION OF THE SEMEN

Many experiments on the dilution and preservation of canine semen were performed, using a wide variety of diluents and both whole and fractionated samples. After some time, it became apparent that the most successful diluent was heat-treated, pasteurized milk. This diluent was used after studying work on bovine semen preservatives.¹⁴ The technique is as follows: A small quantity of pasteurized milk is slowly heated to 92 C. and kept at 92 to 94 C. for ten minutes. It is allowed to cool to room temperature and then a sufficient quantity of milk is gently decanted into a

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Fig. 1—Canine artificial vagina.* One bulb is used for adjusting the size of the lumen and the other for making pulsations.



Fig. 2—Collecting semen from a Greyhound by means of a canine artificial vagina.

clean test tube. The second, sperm-bearing, fraction of the semen is diluted with this milk at a proportion of 1 part of semen to 7 parts of milk. If this is stored at 4 C., it will keep for several days.

INSEMINATIONS

Since these experiments were successful, insemination trials were instituted.

The insemination kit was simple, consisting of a glass syringe connected to a glass pipette by a piece of rubber tubing (fig. 3). Some operators prefer to use a speculum in order to deposit the semen sample as near the cervix as possible. In only one of the inseminations carried out by the author (only 3 will be reported here) was it possible to pass the pipette directly into the uterus through the cervix, and the consensus of opinion is that it is virtually impossible in most bitches.

Experiment 1.—In 1954, a Greyhound bitch was inseminated on her twelfth day of estrus with some Greyhound semen which was 4 days old and which had been preserved in heat-treated, pasteurized milk and stored at 4 C. The bitch whelped 2 puppies after a 64-day pregnancy.⁵

Experiment 2.—To ascertain if this preserved semen would withstand the hazards of travel, a special polythene holder was designed to fit into a thermos bottle, and to this holder was clipped a glass tube containing a vial of preserved semen wrapped in cotton (fig. 4). The bottle was then packed with crushed ice to keep the semen at about 4 C., and was sent several hundred miles by train. On its return, after three



Fig. 3—A simple inseminating kit.



Fig. 4—Thermos bottle with polythene holder as used in these experiments. Semen sample may be seen in the inner tube.

*Manufactured by Arnold and Sons, 54 Wigmore St., London, W. 1; and Guelph, Ont.

days shipment, its microscopic appearance was as good as a portion of the sample that had been retained in a cold room in London.

A sample of this preserved semen was then sent to the Canine Research Station,



Fig. 5—Bitch (experiment 3) and pups at Ithaca, N.Y.

Newmarket, by car and train in April, 1955, where it was inseminated into a bitch in estrus. She subsequently produced 8 puppies. Again, Greyhounds were used.¹⁰

The object of the polythene holder in the thermos bottle was to try to reduce any excessive vibration that might occur and that might be harmful to the semen.

Experiment 3.—Next, a much more ambitious program was put into operation, namely, that of attempting to transport preserved semen to the United States with the object of achieving a conception in that country.*

As an initial trial, one sample of preserved semen was flown to Ithaca, N.Y., to ascertain if this experiment was at all practical. The plane unfortunately was delayed and the sample was 63 hours old when it arrived. This sample was judged capable of fertilizing a bitch up to the time it was 170 hours old.

In the next 12 months, six more semen samples were flown to Ithaca, always by the same three-stage route. On the average, each sample was 48 hours old by the time it reached its destination. Of the six samples sent, one was useless on arrival due to faulty preparation, and the other five were inseminated into bitches.

One of the greatest difficulties associated

with this experiment was that of attempting to assess in advance the correct time at which to inseminate the bitches. Vaginal smears were used to assist in this procedure but, because of the two to three days required for the journey, plus the one to two days necessary to cable information, collect and preserve semen, and reserve airway accommodations, it meant forecasting the correct stage of estrus almost a week in advance. These factors are possibly responsible for only 1 of the 5 inseminated bitches conceiving.

In this successful conception, both the bitch and the donor male were purebred Beagles. The semen was collected and dispatched on April 19, 1956, in response to a cable from Ithaca. The bitch was inseminated on April 25, the semen being 140 hours old. The motility of the semen sample at the time of insemination was found to be 30 per cent.

The gestation period was 66 days, the bitch whelping normally on June 30, 1956; the litter consisted of 5 healthy puppies¹⁷ (fig. 5).

DISCUSSION

Although the dog was the first species to be used for artificial insemination experiments, such breeding was done only experimentally. This was principally due to the difficulty in finding a suitable medium in which to preserve the semen for the necessary length of time. This obstacle has now been removed.

Indications for the use of artificial insemination in dogs are: (1) when natural mating can not be consummated; (2) when the distance between the stud and bitch is great; (3) to increase and extend the usefulness of valuable proved studs; and (4) as an aid in disease control.

However, it must not be inferred that long distance artificial insemination in dogs is now practical and that it can be done with impunity. Only 1 of the 5 bitches inseminated in the United States conceived. The other 4 were inseminated under just as favorable circumstances and with what appeared to be better quality semen samples.

Obviously, in spite of recent advances, considerably more research and investigation on semen preservation, knowledge of the estrous cycle of the bitch, and insemination techniques are necessary to achieve further progress.

*Before any such project could be attempted, it was necessary to make some contacts in the United States and I was fortunate in obtaining the professional interest and financial assistance of the Gaines Dog Research Center, New York, without which this experiment might never have been made. They arranged for Dr. E. P. Leonard, New York State Veterinary College, Cornell University, Ithaca, to work on our behalf, and I am greatly indebted to Dr. Leonard and his colleagues for all their efforts in this project.

If we possessed a reliable substance that could be injected into a bitch in estrus that would guarantee ovulation within 24 hours of injection, then the semen samples could be used in a fresher condition with a more probable chance of obtaining a pregnancy.

SUMMARY

Artificial insemination in dogs is discussed and three experiments are reported:

1) A bitch, in 1954, whelped 2 puppies 64 days after insemination with semen preserved at 4 C. for four days.

2) Semen was shipped by car and train to Newmarket, where it was inseminated into a bitch which whelped 8 pups.

3) Semen samples were shipped by air from England to Ithaca, N. Y., and averaged 48 hours old at destination. Of 5 bitches inseminated, 1 conceived (semen was 140 hours old) and whelped 5 pups.

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Embryo Malformation from Puncture of Amniotic Sac

Since it has been reported that the sex of a human fetus can be diagnosed by examination of cells from amniotic fluid, a warning is issued that this may harm the fetus. When a small hypodermic needle (No. 26) was inserted through the uterine wall and the amniotic sac of each embryo in one uterine horn of mice (no injection), 6 of 14 aborted or resorbed their litters. Ten of the 17 treated embryos that survived in the other 8 litters had cleft palates, while all embryos in the untreated horns were normal.

It appeared that leakage of amniotic fluid constricted the embryo so that the head was pushed against the chest, the tongue forced between the palatine shelves, and fusion was prevented.—*Science*, Sept. 7, 1956.

Pulmonary Embolus from Amniotic Fluid Detritus

This condition, first described in a woman in 1941, is not commonly recognized except in fatal cases. One woman in strong labor, who developed shock, dyspnea, and cyanosis, died within five minutes. Elements of the amniotic fluid, such as epithelial squamæ, mucin, hair, and bile, were found in the pulmonary arteries, alveolar capillaries, uterine venous sinuses, capillaries of the kidneys, a cerebral capillary, and in a capillary in the myocardium. Similar signs were produced in dogs and rabbits by intravenous injection of unfiltered amniotic fluid. The condition results when an abnormal communication develops, such as a tear in the myometrium or a lesion in the maternal placenta, through which the fluid is forced by uterine contractions while the fetus "plugs the outlet."

It is considered "surprising that it apparently occurs so infrequently, especially . . . when pitocin is widely, if not always wisely, given."—*Brit. M. J.*, Aug. 18, 1956.

An Aberdeen Angus bull in Virginia, born in June, 1938, may be the oldest actively breeding beef bull in the United States.—*Breeder's Gaz.*, Nov., 1956.

Clinical Studies on Leptospirosis as a Cause of Abortion in Swine

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ABORTION AND BIRTH of weak pigs are two of the major problems in swine breeding. The cause of these losses can not always be established. Since a large number of swine in the United States are serologically positive to *Leptospira pomona*, an attempt was made to evaluate the significance of leptospiral infection in pregnant sows.

Several herds with naturally occurring leptospirosis were studied. These herds were brought to our attention at the Veterinary Bacteriological Diagnostic Laboratory because of the occurrence of abortions which could not be associated with other disease symptoms.

MATERIALS AND METHODS

Serological Test.—The agglutination-lysis test, using viable *L. pomona* (NIH-1) as the antigen, was employed for demonstrating antibodies. The organisms were cultivated in Schuffner's medium for five to seven days at 30 C. A mixture of 0.1 ml. of antigen and 0.1 ml. of serum dilution was made in a Kahn test tube. After incubation at room temperature for 15 to 30 minutes, one loopful of this mixture was examined by dark-field illumination at a magnification of x 200, with 50 per cent agglutination considered a positive reaction. Samples that were positive at 1:100 were then titered by using double serum dilutions.

Media.—Two mediums were used. Schuffner's medium was prepared as described by Kelser,¹ except that deionized water was used because other types vary considerably in pH and mineral content and Difco neopeptone or proteose peptone No. 3 was substituted for Witte peptone. The rabbit serum was inactivated at 56 to 60 C. for 45 minutes before adding it to the medium base. Chang's medium was prepared as described,² except that rabbit serum was substituted for horse serum. The rabbit serum was inactivated in the same manner as that used in the Schuffner's medium.

Isolation of *Leptospira* from Blood.—Between 0.2 and 2.0 ml. of blood, aseptically ob-

tained, was introduced directly into two to four tubes each containing 7 to 8 ml. of Schuffner's medium. The tubes were incubated at 30 C. and examined weekly for viable leptospires. If no organisms were observed after six weeks, they were recorded as negative.

Demonstration and Isolation of *Leptospira* from Tissues.—Liver or kidney tissues were triturated in physiological saline. Following dark-field examination, 1 to 3 ml. of supernatant fluid was injected intraperitoneally into hamsters or guinea pigs. Schuffner's and Chang's mediums were inoculated with a few drops of hamster blood taken the fourth day postinjection. Mediums were inoculated with blood from the guinea pigs when body temperatures rose above 105 F.

Demonstration and Isolation of *Leptospira* from Urine.—Urine samples, collected from sows during normal urination, were examined by dark-field microscopy at x 200 magnification for motile leptospires. One to 3 ml. of urine was then injected intraperitoneally into hamsters, after which they were bled for cultures.

RESULTS

Herd 1.—In this herd (41 gilts and 2 boars), gilts were selected from the "fat hogs" to raise one crop of pigs and were then marketed. The only new animals introduced were boars.

The herd was not in contact with any other livestock. A stream originated in the pasture but, since it flowed away from this farm, it probably had no effect on the epizootiology of the infection. There was no previous history of abortions.

In April, 1954, approximately one week prior to the earliest expected farrowing, 8 sows aborted within a week. The pigs were dead or died within 48 hours. Most of them were approximately three to four weeks premature. The live pigs (so-called "squealers") were too weak to nurse. During the following three weeks, the remaining 33 sows farrowed normally.

Serological Findings.—Serum samples were obtained from 5 of the gilts which had aborted and from 3 which later farrowed normally (table 1). All were negative for brucellosis.

Herd 2.—This herd, studied in March, 1954, consisted of 40 sows and 3 boars that

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had been raised by the farmer, and 22 gilts that had been purchased in November, 1953, and immediately placed in a pasture with the others. Four gilts had been bred prior to purchase; the remaining 18 were bred within four weeks following purchase.

All of the native sows farrowed essentially normal litters. None of the 4 presumably pregnant gilts farrowed, suggesting early fetal death and *in utero* resorption. Of the 18 gilts bred after purchase, 1 aborted three weeks prior to the farrowing date and abortions continued for three weeks. The majority of these pigs were either stillborn and devoid of hair or died within 48 hours; some were mummified. From these 22 gilts, only 7 pigs were saved.

Serological Findings.—Blood samples were obtained from 12 gilts within two weeks after aborting and from 4 native sows after normal farrowing. All were negative for brucellosis and positive with *L. pomona* (table 2). Native sow 101W, which had been maintained with the feeder pigs and apart from the breeding herd for the past four months, had a low titer, suggesting a previous exposure to *L. pomona*.

Bacteriological and Pathological Findings.—A weak pig, 1 of 2 survivors from sow 0333, was killed 14 days after birth. On necropsy, the kidneys showed swelling and numerous petechial hemorrhages throughout the cortex; there were a few ecchymotic hemorrhages on the left lung and the heart was dilated to approximately twice its normal size. Dark-field examination revealed numerous motile leptospiras from a macerated kidney but none from a liver suspension. The serum was serologically positive with *L. pomona* at 1:1,280.

These sows were rebred and all farrowed normal litters.

Herd 3.—An "abortion storm" in a so-called "pig hatchery" was investigated in July, 1954.

This large swine farm was divided into three main units: breeding farm, pig hatchery, and three sow farms. Animals were continuously transferred from one unit to another. Breeding gilts were taken, when 8 weeks old, from the hatchery unit to the breeding farm and were kept in one large field. They were then bred and placed in lots of 30, each lot composed of gilts bred within one week. When approximately 30 days pregnant, they were moved to the hatchery unit and kept in 5-acre lots until farrowing time. The pigs were weaned

TABLE 1—Serological Findings on Herd 1

Sow No.	Status of farrowing	Reciprocal of <i>L. pomona</i> titer (within 96 hr. after abortion)
1	Abortion	1,600
2	Abortion	3,200
3	Abortion	3,200
4	Abortion	1,600
5	Abortion	3,200
6	Normal	negative
7	Normal	800
8	Normal	100

when 4 weeks old. The sows were then rebred at the hatchery unit and distributed to one of the three sow farms.

All boars were purchased from one source. Each unit maintained its own boars and only occasionally were they transferred between units. The sows and feeder pigs were marketed in all parts of the United States.

History and Clinical Observations.—In February, 1954, 6 of 30 gilts in one lot at the hatchery unit aborted just prior to the farrowing date. Of the next 30 gilts placed in the same lot, 17 also aborted just prior to the farrowing date. A large mudhole persisted in this lot from February to May. No abortions occurred in other lots. Contrary to the usual practice, the 23 gilts which had aborted were returned to the breeding farm to be rebred. The remaining gilts of the involved groups were rebred at the hatchery unit and sent to the sow farms.

During the last two weeks of July, 1954, 18 sows in a group of 57 sows on a sow farm aborted one to three weeks before their farrowing date. All of these pigs were dead or died within 48 hours, and most of them were small and devoid of hair. No other abortions occurred at any of the units.

TABLE 2—Serological Findings on Sows from Herd 2

Sow No.	Source of animal	Status of farrowing	Reciprocal of titer for <i>L. pomona</i> within two weeks after abortion
0333	Purchased	Abortion	10,240
0213	Purchased	Abortion	2,560
1412	Purchased	Abortion	1,280
2431	Purchased	Abortion	2,560
0000	Purchased	Abortion	1,280
1223	Purchased	Abortion	10,240
0253	Purchased	Abortion	5,120
2111	Purchased	Abortion	10,240
0101	Native stock	Normal	640
0101W*	Native stock	Normal	80
2231	Native stock	Normal	640
3133	Native stock	Normal	640

*This sow had not been in contact with the breeding herd.

Bacteriological and Pathological Findings.—Dark-field examinations of urine samples from 4 of the 18 aborting sows in the group of 57 showed numerous motile leptospiras. *Leptospira pomona* was isolated from the urine of 3 of the 4 sows showing leptospiruria. Dark-field examination of the semen from 2 boars was negative for leptospiras.

Histological and bacteriological examinations were performed on 3 newborn pigs from one litter within two hours after birth (table 3).

Serological Findings.—After the 18 sows at the sow farm aborted (July, 1954), serum samples were obtained from all 57 sows and 3 boars in this group. All but 3 sows were positive with *L. pomona* at a titer of 1:100 or higher, 1 sow at 1:51,200. All were negative for brucellosis. Serum samples were also obtained from 27 gilts from the breeding farm unit. All were negative for brucellosis but positive with *L. pomona* at 1:800 or higher. Six gilts, selected at random from the hatchery unit, were negative for brucellosis but were positive for leptospirosis.

Herd 4.—In October, 1953, in a herd of 6 sows, 5 aborted a total of 50 pigs, all dead within 48 hours, between 10 and 21 days prior to the farrowing date. The sixth sow farrowed a few dead and 5 live pigs. These sows were not in contact with any cattle or horses. There were no streams running through the pasture.

The boar was the only animal recently introduced.

Serological Findings.—Serum samples from all 6 sows and the boar were positive with *L. pomona* and negative for brucellosis.

Herd 5.—This investigation was made in April, 1954, four months after an "abortion storm" in which 26 of 60 sows had aborted or farrowed weak pigs which died within

48 hours. These animals were in a field with cattle. No sign of leptospirosis had been noticed in the cattle. A large stream flowing through this field often flooded the pasture.

The sows which had aborted were kept as breeding stock but none conceived until the second or third breeding; all farrowed normally.

Serological Findings.—Serum samples were positive with *L. pomona* at 1:100 through 1:800 but were negative to brucellosis, which would tend to incriminate leptospirosis.

Herd 6.—The initial studies on this herd of 29 sows were previously reported.¹ Leptospirosis had been diagnosed serologically and by isolation of the organism. The only clinical sign observed was abortion in 25 of the 29 sows in October, 1953.

Twelve of these sows, all with a high titer for *L. pomona*, were rebred to farrow the following season. When 15 new gilts were purchased in March, 1954, all were negative for *L. pomona* and each was given a single subcutaneous injection of 2.5 to 5.0 cc. of a *Leptospira* bacterin* and were then placed in a field adjacent to the 12 infected sows. Tests on these vaccinated gilts, at varying intervals during the next two months, showed a titer for *L. pomona* of 0 to 1:80. All remained negative for brucellosis.

Both the native sows and newly purchased gilts farrowed normal litters during the next two farrowing seasons.

Herd 7.—Ten of 21 sows aborted in April, 1954, approximately three weeks prior to the expected farrowing. None of the pigs survived; some were mummified.

Two to three weeks later, the remaining 11 sows farrowed normal litters.

*Leptogen obtained from Pitman-Moore Laboratories, Indianapolis, Ind.

TABLE 3—Results of Bacteriological and Pathological Examination of Aborted Pigs

	Pig A	Pig B	Pig C
Gross appearance of animal	Dead, sub-normal size	Live, weak, normal size, pig had not nursed	Live, weak, normal size, pig had nursed
Dark-field of kidney	Negative	Positive for motile leptospiras	Negative
Dark-field of kidney	Negative	Positive	Negative
Histological findings	Not done	Numerous petechial hemorrhages in the cortical region	Normal
Isolation of <i>L. pomona</i>			
From blood	Not done	Positive	Negative
From kidney	Negative	Positive	Negative
From liver	Negative	Positive	Negative
Titer of serum for <i>L. pomona</i> NIH-1	Not done	Negative	Positive (1:100)

Serological Findings.—Diagnosis of leptospirosis was made in this herd on the basis of the abortions and of positive serological findings.

DISCUSSION

Several cases of abortion in sows have been brought to our attention in the last three years by veterinarians throughout the Middlewest. In many of these herds, laboratory procedures revealed *L. pomona* infection. In a number of herds, the specific cause of abortion was not found. It is of interest that all were negative for brucellosis.

The clinical syndrome of leptospirosis in swine is usually mild or inapparent⁴ in nonpregnant sows, whereas in pregnant sows, abortion has been a common sequela, mainly during the last three weeks of the gestation period. These litters often consisted mostly of dead pigs with some mummified pigs and a few live ones which were usually too weak to nurse and died within 48 hours. As the normal farrowing date approached, the proportion of surviving pigs in aborted litters increased.

Sows with leptospirosis usually have a high agglutination-lysis titer (1:800 or higher) at the time they abort. Those with persistent low titers farrow normally (table 2). The height of the titer can be utilized in differential diagnosis. However, certain factors, especially the age of the culture and the number of organisms, may influence the height of the titer. In herd 2, the difference both in titer and in the stage at which pregnancy was terminated could possibly be explained by the time of exposure. The presence of leptospiral antibodies in 1 native sow that had not been in contact with the newly purchased gilts suggests that the sows probably had contracted the infection prior to the purchase of the new gilts and prior to breeding time. The low titers of the sows could be explained by the length of time elapsed since they were infected. The newly purchased gilts had probably contracted the infection from the sows and were at about the peak of their titer when tested.⁴

For abortion to occur, it would appear that infection must take place during pregnancy.

Sows which abort once, due to leptospirosis, have not been observed to abort again due to the same species of *Leptospira*. The leptospires apparently must gain

access to the pregnant uterus through the vascular system and recovery from the septicemic phase results in immunity.

The abortion rate in infected herds ranged from 20 to 100 per cent and probably was influenced by the status of pregnancy and the number of resistant animals in the herds at the time of infection.

Leptospirosis is transmitted mainly by direct or indirect contact with infected urine. Contaminated mudholes and streams are possible sources of infection since leptospires are known to survive for long periods in bodies of water. However, direct contact with urine from infected cattle or swine is probably the main way in which leptospirosis is disseminated. The role of other animals, such as rodents, in the dissemination of *L. pomona* in the United States is unknown.

The control of leptospirosis presents a major problem due to its prevalence in cattle and swine. This is further emphasized in herd 3, a "pig hatchery" from which pigs were widely distributed.

A compulsory state test-and-slaughter program would seem to be impractical due to the high incidence of infection in both cattle and swine. Also, it could not be justified from the public health aspect at present, since the number of such cases reported in man in this country have been surprisingly few. A more practical approach for the states would be to make the information and diagnostic facilities available so that the individual owners can control the disease in their herds. Only animals which are serologically negative should be introduced into leptospirosis-free herds. One blood sample would suffice for both the brucellosis and leptospirosis agglutination tests.

The following suggestions are given as possible approaches which may be utilized in the attempt to control leptospirosis in an infected herd.

- 1) Prevent access of susceptible livestock to contaminated streams, ponds, and mudholes.
- 2) Test all cattle and swine on the farm for leptospirosis and, if economically feasible, eliminate the positive animals. Repeat this procedure until two negative tests, one month apart, are obtained.
- 3) Use an immunizing agent on all serologically negative animals. Further critical evaluation of bacterins is still necessary, although a limited number of good results have been observed in cattle⁴ and in swine (herd 6).
- 4) Attempt to eliminate the renal carrier by

use of chemotherapeutic agents. More research is needed on this subject. The problem of detecting the renal carrier is so laborious that all serologically positive animals probably should be considered as potential shedders.

Streptomycin (0.25 to 0.5 Gm.) in a single injection was effective in stopping the excretion of *Leptospira* organisms in the urine of infected pigs weighing about 80 lb.⁵ The tetracyclines, when properly administered, should also be of value. The effective treatment of boars could be of great value in preventing spread of this disease.

SUMMARY AND CONCLUSIONS

1) Studies on naturally occurring *Leptospira pomona* infection in seven swine herds is reported. Abortion and death of newborn pigs were the only signs observed. Diagnosis was confirmed by the agglutination-lysis tests and by isolation of the organism in some herds.

2) *Leptospira pomona* appears to be an important cause of abortion in swine in the Middlewest.

3) The evidence suggests that abortion in swine, due to leptospirosis, is dependent upon the stage of gestation at time of exposure.

4) Sows which aborted once, due to leptospirosis, have not been observed to abort again due to the same organism.

5) The abortion rate in infected herds has ranged from 20 to 100 per cent.

6) In a limited study, a bacterin seemed to prevent abortions in susceptible animals.

7) Possible methods for controlling the dissemination of leptospirosis in swine are suggested and the necessity for such a program is emphasized.

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Lapinized Vaccines for Hog Cholera

Lapinized vaccine produces a lasting immunity in a short time. However, it has been found highly virulent for pigs less than 2 weeks of age, and especially for the fetus, which may spread this virus after birth. In pigs less than 6 weeks of age, this virus may multiply and produce an acute disease when the pigs reach the age of 4 to 6 months.

The simultaneous use of anti-hog cholera serum does not show much capacity for reducing the harmful activities of the lapinized virus.

It is advised that lapinized vaccines be used only with the permission and strict control of veterinary sanitary officials, and that its use be limited to recently infected herds or to those immediately threatened with infection.—[G. M. van Wavern: Vaccination Against Hog Cholera by the Use of Lapinized Vaccines. Off. Internat. des Epizoot., 46, (1956):102-121.]—J. P. Scott.

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Animal's Fat Measured with Anesthetics.—Fat tissue has a high affinity for brief-acting barbiturates such as thiopental and kemithal. After being anesthetized with these drugs, the speed of recovery of rats and pigs increased with their fatness.—Agric. Res., Oct., 1956.

Parasitism of Adult Turkeys in Florida by *Leucocytozoon Smithi* (Lavern and Lucet)

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LEUCOCYTOZOON SMITHI infections of turkeys have been reported from the majority of the southeastern states. At the present time, only the black flies of the genus *Simulium* (Simuliidae, Diptera) are known vectors of this organism.

The immature stages of these biting gnats inhabit streams and rivers, the swifter flowing areas being the most suitable breeding habitats. Eggs are deposited on sticks, rocks, or aquatic vegetation and the larvae and pupae are found attached to the same objects several inches below the surface of the flowing water. The adults of several species of black flies have been reported to feed on turkeys, and at least three species have been proved to be vectors of *L. smithi*. A study in Virginia¹ proved the black fly, *Simulium jenningsi* Mall. (= *nigroparvum* Twinn.) to be an important vector in that area.

The first proof of the transmission of *L. smithi* by *Simulium slossonae* D + S was reported from South Carolina in 1953.² Natural and artificial transmissions by *S. slossonae* were also shown in South Carolina.³ *Simulium occidentale* Townsend was considered the vector in an outbreak of *L. smithi* in Nebraska.⁴ In the southeastern United States, losses in poults were reported⁵ to be unusually high; however, low mortality and morbidity rates were characteristic in birds of market age.

Leucocytozoon smithi as an unadulterated infection and in conjunction with enterohepatitis, trichomoniasis, and coccidiosis was reported⁶ as an important cause of losses in turkey poults in Central Texas. Leucocytozoon parasitemias were diagnosed in domestic and wild turkeys in Georgia, Alabama, Missouri, South Carolina, and Florida.⁷ The histopathology of *L. smithi* infections in 10-month-old turkeys in Alabama was recently described.⁸ Schizonts of

L. smithi have been described in the liver of artificially infected turkeys,⁹ and the existence of the disease in Georgia has been documented.¹⁰

The purpose of this paper is to report two outbreaks of *L. smithi* infection in finished turkeys in Florida. The coexistence of Leucocytozoon infection with other diseases is also noted.

CASE REPORTS

A turkey farm near Palatka, Fla., producing Broad-Breasted Bronze turkeys for the Thanksgiving and Christmas markets, was plagued with heavy losses in finished birds. Breeder turkeys were not maintained on this farm; all of the birds were purchased as poults from a western hatchery. Poults were maintained in brooder houses until they were 9 to 12 weeks old, at which time they were placed on ranges. Losses in poults were negligible and deaths in grown birds did not occur until the time the turkeys were being finished off for the Thanksgiving market. Approximately 300 of 1,500 finished birds were lost. The owners reported that as many as 30 turkeys died within a 24-hour period.

Clinical signs of disease included depression and listlessness. These manifestations were seen only briefly before death. Necropsy lesions consisted of splenomegaly, congested livers with and without small necrotic foci, and hemorrhagic enteritis. Gram-negative, bipolar-staining rods identified as *Pasteurella multocida* were consistently cultured from spleens and livers of obviously sick birds. This organism proved pathogenic for rabbits, mice, and disease-free turkeys. In all cases, Giemsa-stained blood smears from dead and sick birds revealed moderate-to-heavy *L. smithi* infections. Gametocytes of the double bar variety were the predominant forms observed (fig. 1, 2).

Flowing streams were located on two sides of the fields in which the turkeys were confined. The farm was visited approximately three weeks after losses had started and stream observations made at

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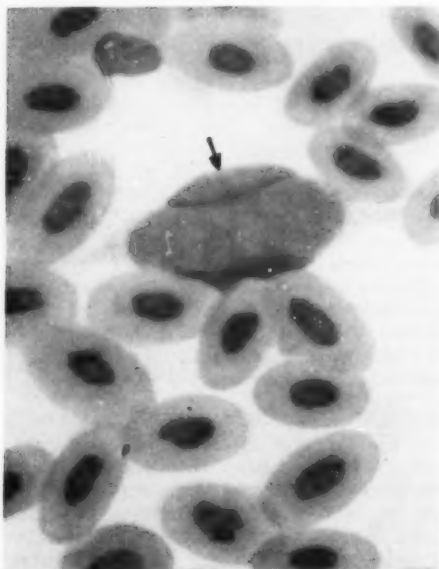


Fig. 1—*Leucocytozoon smithi* in blood film from an infected turkey showing macrogametocyte (arrow) with an elongated tail and two lateral bars. Giemsa's stain; $\times 1,700$.

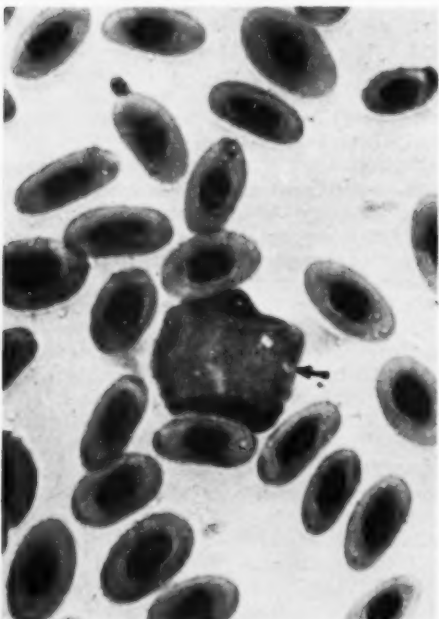


Fig. 2—*Leucocytozoon smithi* in blood film from an infected turkey showing a gametocyte with two lateral bars (arrow). Giemsa's stain; $\times 1,200$.

that time indicated no black fly breeding, although many suitable breeding areas were found. Three weeks after the first inspection of the farm, the streams were examined again and light black fly infestations were found on aquatic vegetation, sticks, and dead leaves in the stream.

Heavy infestations of immature black flies were found in another stream approximately 3 miles from the turkey farm. Collections were identified* as *S. slossonae*, *Simulium tuberosum* Lundst., and an undescribed species of *Simulium* designated as species No. 58.

Leucocytozoon infection also was diagnosed in a large breeder flock consisting of 280 Broad-Breasted Bronze and 920 Broad White turkeys. In this instance, 60 full-grown birds died over a period of three months; listlessness, anorexia, depression, progressive emaciation, diarrhea, and death were the principal signs of disease. Leukosis was diagnosed at necropsy in all birds by gross lesions and confirmed histopathologically. Neoplastic growths were found consistently in the liver, spleen, kidneys, frequently in the reproductive organs, and rarely in other tissues such as the pancreas, small intestine, and cecum. Blood smears prepared from sick and dead birds were found to be heavily parasitized with *L. smithi*. Gametocytes having two lateral bars were the most frequently encountered forms. Random blood sampling of the flock, two months after the last death, revealed only a mild *Leucocytozoon* parasitism persisting.

One small stream ran parallel to, and within 50 ft. of, one border of three ranges where the breeder turkeys were confined. A larger stream was also located within 2 miles of the turkeys. Moderate infestations of immature black flies were found in the stream nearest the turkeys, and extremely heavy infestations were found in the larger stream. The collections from both streams were identified as *S. slossonae* and *Simulium* species No. 58.

DISCUSSION

It has been suggested⁵ that the *Simulium* vectors of *Leucocytozoon* disease might also be capable of transmitting the fowl cholera organism, *Past. multocida*. The

*The authors thank Dr. Alan Stone, Section of Insect Identification and Parasite Introduction, U. S. Department of Agriculture, for the identification of *Simulium* species from all streams.

Leucocytozoon infections described herein report the coexistence of *L. smithi* with fowl cholera in one instance and with leukosis in another instance. It is impossible to state with certainty the relationship between fowl cholera and Leucocytozoon infection from these observations. However, the acute fowl cholera infection was only slightly amenable to the action of injectable antibiotics, such as a combination of penicillin and dihydrostreptomycin or terramycin® alone. The poor response of the disease to the three mentioned antibiotics was observed even though these products, in addition to aureomycin® and tetracycline, produced sizeable zones of inhibition on agar plates which had been seeded with fowl cholera organisms and antibiotic discs.

This evidence suggests the probability that *L. smithi* may act as a stress factor which complicates certain diseases of mature turkeys. Additional evidence supporting the stress theory concept concerns the hematological findings among birds showing clinical evidence of fowl cholera and those which recovered from the disease. Turkeys obviously sick with fowl cholera were always heavily parasitized with *L. smithi*, while birds that had recovered from the bacterial infection as a result of antibiotic therapy were shown to harbor only small numbers of the parasites.

Visceral leukosis is an uncommon disease of turkeys. Hematological and histological examinations showed that all of the turkeys that died of leukosis were also heavily parasitized with *L. smithi*. After losses from leukosis had abated, a representative number of blood samples indicated that Leucocytozoon infection was either extremely mild or negative in the remaining, apparently normal, birds.

It would appear, from the two reports of Leucocytozoon parasitism described herein, that *L. smithi* may be a stress factor that aggravates an existing disease condition in mature turkeys. In these two flocks, fowl cholera and leukosis assumed a particularly devastating form when complicated by Leucocytozoon infection.

Under Florida conditions, finished turkeys or breeders which were raised on high ground without flowing streams or swamps in the vicinity did not harbor Leucocytozoon parasites. Farms located as far as 6 miles from streams where black fly larvae were present did not have parasitized turkeys. It is generally agreed that all reser-

voirs of *L. smithi* are not known; however, Leucocytozoon infection has occurred in wild turkeys in Florida,⁷ and wild turkeys had been observed in the vicinity of both farms concerned in this report. On the farm where breeder turkeys were maintained, it is logical that the breeders were the source of year-to-year infections in the flock. Wild turkeys, however, were probably responsible for the original infection.

The specific vectors of *L. smithi* in these two instances have not been determined. The presence of *S. slossonae*, a proved vector in South Carolina, in streams near both of these turkey-production centers would indicate that this species may be involved in the transmission of the disease in Florida. It is entirely possible that other biting or blood-sucking arthropods may play a role in the transmission of *L. smithi*. A severe outbreak of the disease has been reported in Canada¹¹ in the absence of simuliid flies, but stable flies and mosquitoes were present in large numbers.

SUMMARY

The circumstances pertaining to Leucocytozoon *smithi* infection in two flocks of finished turkeys are described. Leucocytozoon infection occurred simultaneously with fowl cholera in one instance and with visceral leukosis in the second.

The possibility that Leucocytozoon infection acts as a stress factor that increases the severity of coexisting infections is postulated.

The presence of *Simulium slossonae* breeding near the turkey ranges in two instances of Leucocytozoon infection indicates that this species probably is the vector for *L. smithi* in Florida.

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Carcinoma of Modified Sebaceous Gland Origin in the Forelimb of a Dog

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A male Boxer, 8 years old, was received in a state of malnutrition and dehydration and weighed approximately 20 lb. less than normally expected of a large dog of that breed. The only visible abnormalities were enlargements on the right forelimb and associated pectoral region (fig. 1). The swellings were not circumscribed and were loosely attached to the skeleton. Blood studies and urinalysis were normal. The procedure chosen for diagnosis and correction of the condition was exploratory surgery, with the subsequent removal of the enlargements. The forelimb was chosen for initial surgery.

SURGERY AND TERMINATION

The patient was anesthetized and prepared in accordance with standard procedure and a continuous drip of whole blood was commenced prior to surgery.¹ The incision was made on the volar surface of the appendage, extending from the region of the cubital (elbow) articulation to a point approximately 14 cm. distal. The fascia was dissected and the enlargement exposed.

The entire extensor carpi radialis was found to have lost all appearances of muscle

tissue, and it had the gross appearance of splenic tissue. On further dissection, it was evident that only this one muscle was affected. The lesion was confined within the muscle sheath and there was no evidence of metastasis.

The affected muscle was detached at the origin and insertion and was excised. Gel-foam[®] was employed as a temporary replacement for the removed tissue and the retained fascia was sutured into apposition. A vertical mattress-type suture with size 00 dermalon[®] suture material was used to close the skin incision. The dog received 300 cc. of whole blood during surgery.

The abnormal organ was submitted to the pathology laboratory² for histological studies, and report of a malignant neoplasia (undetermined nature or type) was received.

After two weeks of satisfactory progress, the patient was prepared for the second and final operation. A continuous drip of crossmatched, whole blood^{2,3} was started prior to surgery.¹ A liberal skin incision was made extending from the anterior thoracic region to a point in the vicinity of the xiphoid cartilage. After careful dissec-

¹Produced by the Upjohn Co., Kalamazoo, Mich.

²Produced by Davis and Geck, Inc., Brooklyn, N. Y.

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Fig. 1—Dog before operation, showing enlargements (tumor) on the right forelimb and pectoral region.

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tion, it was found that the right deep pectoral muscle was involved in the same manner as the muscle previously removed. The affected muscle was detached at both the origin and insertion, and gelfoam was again employed for temporary tissue replacement. The area was then sutured. The dog received 400 cc. of whole blood during surgery and no complications occurred.

Histological studies showed that the lesion was identical with that taken from the forelimb. As far as could be determined, the entire neoplasm had been surgically removed; however, as in any like instance, there was a possibility that subclinical metastasis had occurred.

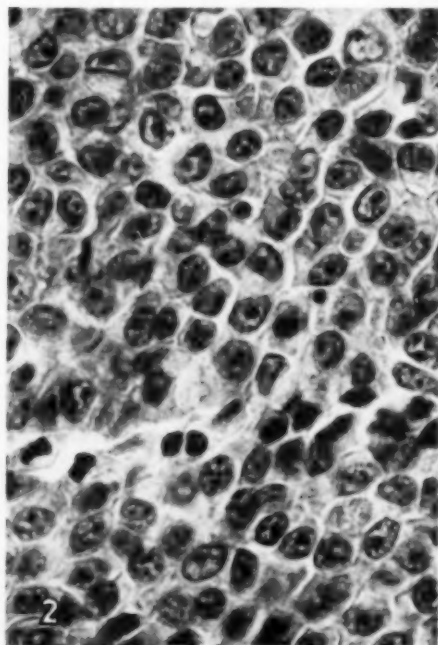
Progress following the second operation was gratifying. The dog was released from the clinic ten days after surgery and, from all outward indications, recovery could be expected. Sixty days later, the dog was reported to be in excellent condition and had gained 11 lb. Locomotion was normal and the lesions were completely healed.

HISTOPATHOLOGY

The tumor was composed of a compact mass of polyhedral, epithelial-type cells

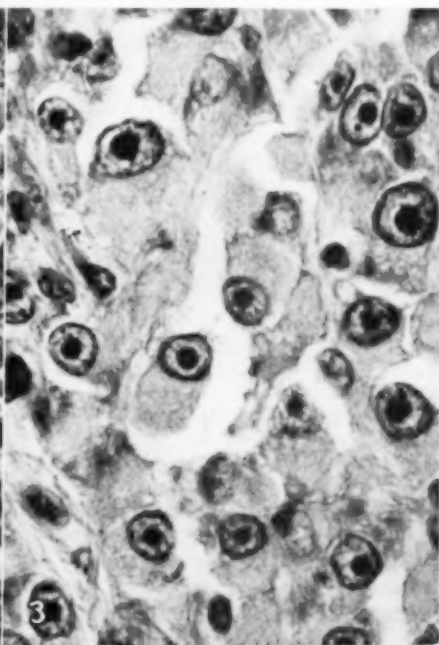
and a minimal amount of connective tissue stroma. No particular anatomical arrangement was seen other than a vague lobular pattern due to confluence of masses of neoplastic cells. The outstanding microscopic characteristic of the tumor was variation in the size of the neoplastic cells. The predominant cell was a small polyhedral epithelial element about the size of a medium or large lymphocyte. It had a relatively large nucleus with fine chromatin granules and a distinct nucleolus (fig. 2). The cytoplasm contained fine, moderately eosinophilic granules. Interspersed among the small cells were larger tumor cells apparently derived from the small ones and of a similar character except for size. The large cells had a more prominent nucleolus, but their cytoplasm was granular and stained pink with eosin like the cytoplasm of the small cells. Some of the large cells were five to six times larger than the small cells (fig. 3).

There was no definite pattern of arrangement of large cells in relation to small cells. The large cells occurred singly or in vaguely defined foci among the small ones



—A.F.I.P. No. 55-22004

Fig. 2—Area of the tumor of the dog, showing small cells. x 975.



—A.F.I.P. No. 55-22006

Fig. 3—Area of the tumor of the dog, showing large cells. x 975.

and, in some areas, there was an irregular undefined mixture of small and large cells. The only consistent feature was the numerical predominance of small cells over large cells. The morphology of the tumor cells, and their variation in size, was characteristic of tumors originating in the circumanal glands or modified sebaceous glands in the anal mucosa of dogs. However, a diagnosis of modified sebaceous gland tumor was not seriously considered until the tumor had been studied and reviewed.** This caution was occasioned by the location of the tumor in the forelimb and by the fact that there was no knowledge of a primary tumor of the skin in that area.

On review of the case, concurrence was not obtained on a suggestion that the tumor was an endotheliomatous-type growth derived from a bursa or tendon sheath. Special stains revealed that the reticulum was limited to the supporting elements and was not intimately associated with the neoplastic cells. This is characteristic of an epithelial tumor rather than a supporting tissue tumor, such as reticulum cell sarcoma. Pigment found in the tumor proved to be hemosiderin rather than melanin and, furthermore, it was deposited in areas with more abundant stroma and was never actually identified within tumor cells. Those observations eliminated melanoma from consideration. Although there was considerable free blood (hemorrhage) in some areas of the tumor, there were neither blood channels lined by tumor cells nor other histological characteristics that would lead to consideration of angiosarcoma.

It was the consensus that the growth originated in a modified sebaceous gland of a type corresponding to the circumanal glands but located in the skin of the affected limb. According to records in the Registry of Veterinary Pathology, it is not unusual for modified sebaceous gland tumors to arise elsewhere than in the perianal region, but it is rare for them to be malignant. In this instance, the tumor was obviously malignant as indicated by its clinical course, the invasive character of the growth, and the high rate of mitotic activity. The diagnosis was carcinoma of a modified sebaceous gland, origin in the forelimb of a dog.

**The Registry of Veterinary Pathology, Armed Forces Institute of Pathology, Walter Reed Army Medical Center, Washington, D. C.

References

- 'Bonica, J. J., and Lyter, C. S.: Blood Loss During Surgical Operation. *Anesthesiology*, 12, (1951): 90.
'Young, L. E., O'Brien, W. A., Swisher, S. N., Miller, G., and Yuile, C. L.: Blood Groups in Dogs—Their Significance to the Veterinarian. *Am. J. Vet. Res.*, 13, (1952): 270.
'Newberne, J. W.: Anemia in the Canine, with a Note on Blood Groups. *Auburn Vet.*, 10, (1954): 175.

Actinobacillosis in Tongue of Dog

Actinobacillosis of the tongue is common in cattle but has seldom, if ever, been reported in dogs.

A farm dog, 9 months old, in Britain, developed nodular swellings on the border of the tongue at the junction of the middle and posterior thirds. They were firm, non-painful, yellowish, and caused little inconvenience. A biopsy, taken under anesthesia, showed a collection of small abscesses containing a yellow, rather oily, pus. Pending a laboratory diagnosis, the dog was given 300,000 units of crystalline penicillin daily for six days. The lesions receded and, three months later, were felt only as small nodules.

The organism differed slightly from *Actinobacillus lignieresii* but belonged in the actinobacillus group. It was somewhat resistant to penicillin but in this case no other therapy was necessary. (A case of tracheal actinomycosis in a dog has since been recorded.)—*Vet. Rec.*, Sept. 22, 1956.

Toxoplasmosis in Chinchillas

Toxoplasmosis was reported in four widely separated chinchilla ranches in Ontario. The animals showed drooping ears, rough fur, a hunched position, respiratory distress, a distended abdomen, and temperatures elevated 3 to 6 F. The mortality was up to 50 per cent after four to ten hours of illness. Necropsy revealed blood-tinged fluid in the pleural and peritoneal cavities, congested lungs, enlarged mesenteric lymph nodes, and areas of necrosis which contained toxoplasma in the lungs. The diagnosis was confirmed by inoculation of spleen and liver tissue into white mice. Infection may have been introduced by wild rodents or birds.—*T. J. Hulland in NCBA Res. Bull.* 25, Sept., 1956.

Synthetic amino acids may be finding a place in poultry rations.—*Sci. News Letter*, Oct. 13, 1956.

What Is Your Diagnosis?

Because of the interest in veterinary radiology, a case history and accompanying radiographs depicting a diagnostic problem are usually published in each issue of the JOURNAL.

Make your diagnosis from the picture below—then turn the page ►

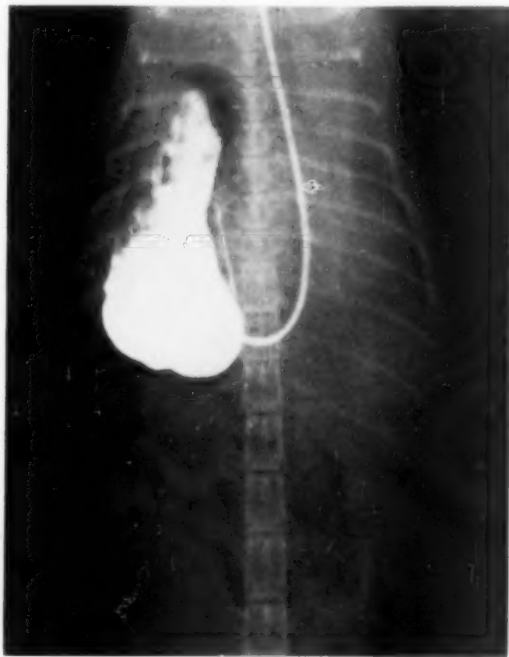


Figure 1

History.—A female Siamese cat, 9 months old, was hit by an automobile. The following day the injured cat was breathing with difficulty. A radiograph was taken.

(Diagnosis and findings are reported on the next page)

Here Is the Diagnosis

(Continued from preceding page)

Diagnosis.—Diaphragmatic hernia, with the stomach in the left side of the thorax.

Comments.—This radiograph was taken after a radiopaque No. 7 French catheter had been inserted into the stomach by way of the nasal cavity. The stomach was outlined by means of 60 cc. of barium sulfate solution injected with a hypodermic syringe through the catheter.

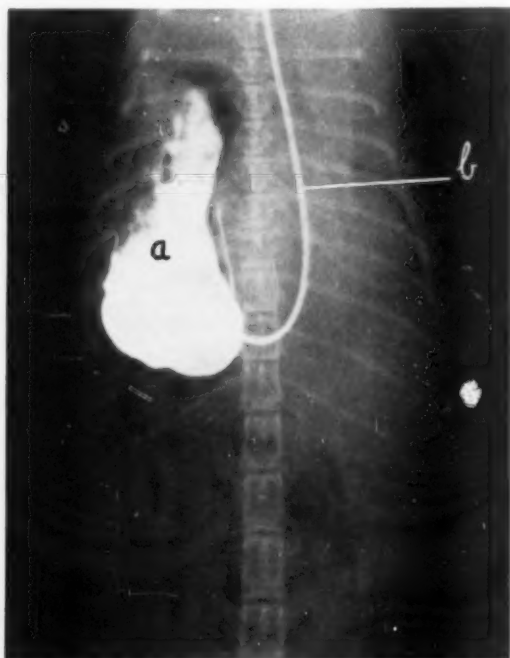


Fig. 1 — Radiograph of a cat showing the stomach (a) in left side of thoracic cavity as a result of a diaphragmatic hernia. The radiopaque catheter (b) is visible.

The radiograph was submitted by members of the staff of the Riser Animal Hospital, Skokie, Ill.

The Interpretation of Whey Titers in the Diagnosis of Brucellosis

H. S. CAMERON, D.V.M., Ph.D.

Davis, California

COMPARATIVE blood and whey tests have indicated that the whey test, using brucellosis ring test (BRT) antigen, can be substituted for the blood test for the diagnosis of brucellosis in lactating cows.¹ In adapting such a test for use in an eradication program, the question of the interpretation of low or intermediate whey titers becomes important. In the blood test, the interpretation has been standardized in accordance with the vaccination status of the animal (table 1).

TABLE 1—Blood Test Data and Vaccination Status of Lactating Cows

Dilution			Diagnosis	
1:50	1:100	1:200	Vaccinated Animals	Nonvaccinated Animals
—	—	—	Negative	Negative
1*	—	—	Negative	Suspicious
+	—	—	Negative	Suspicious
+	1	—	Suspicious	Suspicious
+	+	—	Suspicious	Positive
+	+	1	Suspicious	Positive
+	+	+	Positive	Positive

*Incomplete.

This paper presents data which will aid in determining the significance of low whey titers and, thus, lead to a standard interpretation.

Because blood titers are referred to in terms of dilutions, even when the plate technique is used, the suggestion has been made that whey-plate titers could be referred to in similar terms. Such a procedure would be convenient, but referring to a whey titer in terms of dilution comparable to a serum titer, when an entirely different antigen is used, would be difficult to defend. The blood serum-plate antigen has been standardized to a density so that titers correspond to those obtained in the tube technique in which a true serum dilution is employed. The BRT antigen, however, has a much lower concentration of cells and has not been standardized to a dilution technique and, therefore, whey

titers can only be referred to in terms of the amount of whey used.

METHODS

The blood test was conducted by the standard plate technique using antigen furnished by the Agricultural Research Service, U. S. Department of Agriculture, and titers were interpreted in accordance with table 1. Whey was obtained by the addition of two drops of rennin to approximately 10.0 ml. of a composite sample of milk from all four quarters. The whey was tested by the plate technique using 0.04, 0.02, and 0.01 ml. of whey. Whey titers were designated as 2, 3, and 4, representing 0.04, 0.02, and 0.01 ml. of whey, respectively. Whey titer 1 was held for the 0.08 ml. of serum, should it have been desirable to use that amount. One standard drop of ring test antigen was added and the reaction read in five to ten minutes. Tests were conducted in infected herds as well as in herds that were BRT negative. Whey titers 3 and 4 have been classified as positive, whey titer 2 as suspicious. A shedder condition was determined by inoculating milk into guinea pigs.

RESULTS AND DISCUSSION

The blood and whey reactions in a group of 4,423 animals representing 68 entire herds, none of which were free from infection, is summarized (table 2). These herds were from an area where a relatively small amount of calfhood vaccination had been practiced. The purpose of table 2 is to illustrate the relatively small number of whey-suspicious reactions as compared with blood-suspicious reactions that are encountered, even in infected herds (23 as compared with 130). These 23 whey-suspicious reactions are equally distributed between blood-positive and blood-negative. Table 2 also illustrates the agreement between blood- and whey-negative reactions (99.3%). As indicated in a previous report,² the high percentage of blood-positive reactions that are whey-negative is due to the adult or late calfhood vaccination. In California, calfhood vaccination is permitted up to 12 months of age.

The results of comparative blood and whey reactions in brucellosis ring test-negative herds is shown (table 3). This table was designed to show the absence of low titer whey reactions as compared with

From the School of Veterinary Medicine, University of California, Davis.

These investigations are in cooperation with the Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C.

TABLE 2—A Summary of Comparative Blood and Whey Reactions in 4,423 Cows

	Blood-negative		Blood-suspicious		Blood-positive		Total wheys	
	(No.)	(%)	(No.)	(%)	(No.)	(%)	(No.)	(%)
Whey negative	4,079	99.5*	115	88.5	35	18.8	4,229	95.6
Whey 2	11	0.3	2	1.5	10	5.4	25	0.5
Whey 3 and 4	17	0.4	13	10.0	141	75.8	171	3.8
Total	4,107	(92.9%)*	130	(2.9%)	186	(4.2%)	4,423	.....

*Percentage of total in column. †Percentage in parenthesis refers to total animals in survey (4,423).

blood-suspicious reactions in noninfected herds. In comparing this table with the data from infected herds (table 2), it would appear that low whey titers are found only in infected herds. All of the herds represented in table 3, except herd 9, were from a small county where, because a portion of the grade A milk was sold in Oregon, they were required to meet rigid requirements of that state with respect to brucellosis. Most herds, therefore, had been free from brucellosis for a considerable period. Herd 2 was an exception in that it was in the process of brucellosis eradication. Undoubtedly, this herd was falsely BRT-negative, because of the dilution factor, in that the test was made from milk taken from a bulk tank representing a total of 148 cows, only 1 of which was whey-positive.

The distribution of shedders, as related to blood and whey reactions, is shown (table 4). The cows so tested (702) were all from infected herds. Animals shedding *Brucella* in the milk included only 8 of 353 that were whey-negative, 4 of 37 at the whey 2 titer, and 188 of 312 at the whey 3 and 4 titers. Table 4 also shows that 5 of

71 animals that were negative to the blood test were shedding *Brucella* in the milk, while 5 of 42 that were blood-suspicious were shedders; in each instance, 4 of the 5 were whey-positive.

All milk samples used in these tests were

TABLE 4—Distribution of *Brucella* Shedders as Related to Blood and Whey Reactions

Blood	Whey neg. Whey 2 Whey 3 and 4				Total	
	Inoc. Shed.	Inoc. Shed.	Inoc. Shed.	Inoc. Shed.	Inoc. Shed.	Inoc. Shed.
-----	17	1	11	0	43	4
+i-	27	1	2	0	13	4
++-	177	2	8	0	40	16
++i	40	1	1	0	21	7
+++	92	3	15	4	195	157
Total	353	8	37	4	312	188

Inoc. = inoculated. Shed. = shedders, positive milk culture.

normal in appearance. Samples showing gross evidence of containing inflammatory exudate were discarded. In a local herd, negative to BRT, whey, and blood tests, whey tests were made on milk 24 hours after the cows had calved. Eleven such samples were examined. Ten showed varying whey titers at 24 hours but all were negative at 72 hours.

From these results, it is apparent that whey reactions are easier to interpret than are blood reactions and that the low-titer whey reactions, since their numbers are much lower than suspicious blood reactions, will not constitute a serious problem in a brucellosis eradication program. They are found only in infected herds. This conclusion is strongly supported by evidence contained in table 3 where there is a direct comparison of BRT, blood, and whey reactions in herds with a long history of freedom from infection.

CONCLUSIONS

Animals showing whey titer 3 or 4 should be considered infected unless they were vaccinated within the past three months or had calved within 72 hours. Since whey 2 titers, as a rule, occur only in infected herds subject to retest, they may

TABLE 3—Comparative Blood and Whey Reactions in Ring Test-Negative Herds

Herd	Blood			Whey		
	Neg.	Susp.	Pos.	Neg.	2	3 and 4
1	132	2	1	132	0	0
2	163	9	2	147	0	1*
3	70	14	0	72	0	0
4	42	0	0	40	0	0
5	91	3	0	70	0	0
6	82	2	0	68	0	0
7	163	5	0	123	0	0
8	...	...	...	56	0	0
9	101	0	0	88	1†	0
10	49	3	0	52	0	0
11	22	1	0	23	0	0
12	124	0	0	109	0	0
13	47	5	0	47	0	0
14	80	6	2	107	0	0
15	84	4	0	98	0	0
16	15	0	0	15	0	0
17	...	...	...	26	0	0
18	...	...	...	12	0	0
19	...	...	...	108	0	0
Total	1,265	55	5	1,353	1	1

*From bulk tank. †Positive on retest three weeks later.

be regarded as suspicious on original tests and positive if the titer persists.

References

¹Cameron, H. S., Kendrick, J. W., and Merri-man, R. W.: A Whey-Plate Test for the Diagnosis of Bovine Brucellosis. *J.A.V.M.A.*, 129, (1956): 19-22.

²Cameron, H. S., and Kendrick, J. W.: Differentiating Postvaccination Reactions in Brucellosis from Virulent Infection. *J.A.V.M.A.* In press.

A Survey of the Milk Ring Test

The Oregon Department of Agriculture has been contemplating the use of the milk ring test as an adjunct in their brucellosis control program. However, before instituting a complete ring test program, it seemed advisable to determine how successfully the program has worked in other states. A questionnaire was, therefore, sent to the state veterinarians of the other 47 states. Forty-three were returned, but not all states answered the questionnaire completely.

Of the 43 states, 36 indicated that they were now using the ring test in some phase of their testing program, two indicated they were going to discontinue use of the ring test, and 12 more states reported that they were going to continue its use only as an educational or screening device.

The ring test samples were collected at three-month intervals in four states, at four-month intervals in five, at six-month intervals in 23, at ten-month intervals in one, and two states used it at irregular intervals.

From the answers and comments, it is apparent that many states do not blood test all of the herds covered by the Brucella ring test but do test only those showing positive infection and, in limited cases, some of the negative herds. Thirteen states blood-tested herds as soon as possible; one state, "as soon as owner desires"; seven states, "within 30 days"; two states, within 15 days; two states "within 60 days"; one state "within 90 days"; one state, "after three negative or clean ring tests"; one state, "if requested by owner"; one state replied, "only about 20 per cent of the testing was done"; and one state reported that they regularly test all cattle twice a year—one ring test and one blood test.

The question on finding "false positives" to the ring test was answered by 27 states. Of the 27, 21 indicated that they did find instances of false positives; one state re-

ported them as high as 73 per cent. Of the 21 states answering this question in the affirmative, 17 indicated 20 per cent or more false positives to the ring test.

Only 24 states answered the question regarding finding false negatives. Of these, ten thought they did find a high number of false negatives and 14 states thought they did not. The number indicated ranged from "very few" to "20 per cent."

Five states indicated that they were certifying herds on the basis of ring test results alone. One state indicated that they certified on the basis of only one annual ring test. Twenty-six states indicated that they used the blood test for certification and used the ring test only as a basis of a preliminary survey.

Nearly all state officials believed that certain aspects of the ring test were useful as an adjunct to blood testing in brucellosis eradication, that it has great value as a screening test, and that through its use we would be able to more rapidly reduce the incidence of brucellosis. On the other hand, all evidence shows that its accuracy is limited and that its value rapidly decreases when it is used as a substitute for the blood test.—*H. L. Dinesen, D.V.M., Assistant State Veterinarian, Salem, Ore.*

Prepartum Milking

When more than 100 dairy cows were milked for two weeks previous to their expected calving date, at the West Virginia Experiment Station, they gave about the same amount of milk during the following lactation period as control cows.

Prepartum milking had no effect on the length of gestation, on birth weight of the calf, nor on the occurrence of milk fever (6% in each group). There was an increase in the congestion of the udder and, also, a marked increase in retained fetal membranes, from 6 per cent in controls up to 33 per cent in cows giving 20 lb. of milk daily prepartum. The milk of the latter cows changed from a colostrum to normal before calving but their calves were as thrifty on their milk (cod liver oil was added) as were colostrum-fed controls.

Contrary to expectations, 4 other calves, raised on herd milk without added colostrum, vitamins, or antibiotics, grew as well as those which received colostrum.—*Hoard's Dairyman, Oct. 25, 1956.*

An Analysis of Progress in Medicine

The following comments on developments in medicine are excerpts from an editorial on the "Natural History of Disease" in the *Journal of the American Medical Association* (Oct. 6, 1956).

"Health [in man] is no longer viewed in the negative sense as the mere absence of disease. Health connotes a harmony of mind and body with self and environment."

In the mammalian body there is a complex, ever-changing medium of physical, physiological, and chemical factors "so integrated as to maintain a sense of well-being." Changes in tissue requirements may involve simple chemical reactions or complex physical, enzymatic, and steroid mechanisms. If the harmonious balance among these is upset by inability to meet the demands of normal or abnormal processes, it results in a disturbance of function which may find expression in symptoms (sensed by the individual) as well as in signs (sensed by others).

Man's endeavors to interpret the manifestations of disordered function are reflected in the medical progress of successive periods.

In the early nineteenth century, "dead horse" medicine dominated the scene because of the ascendancy of the study of morbid anatomy as well as the concept of clinical-pathological correlations. Later, microbiology and the "clinical fixation upon etiology" became dominant. In recent decades, the upsurge of physiological and physiological-chemical knowledge, including that of steroids and enzymes, has made a remarkable impact on medicine.

DISEASE

Disease has been defined as "no more than a vigorous effort of nature to throw off morbid matter . . ." Regardless of whether the inciting factors are microbial, nutritional, metabolic, degenerative, or neoplastic, there are contributing circumstances that must be considered in comprehending the natural history of disease.

Changing circumstances have produced radical changes in the mode of many infectious diseases. The incidence and severity of such human diseases as black measles, diphtheria, typhoid, lobar pneumonia, and suppurative mastoiditis has declined. Tuberculosis and venereal diseases are more adequately treated but the failure to eradicate them "reflects the limitations of purely curative medicine." Moreover, with the dis-

ruption of the biological balance of nature, by agents such as antibiotics, resistant strains of pathogenic bacteria are appearing and rickettsial, viral, and fungal infections are increasing.

THE PHYSICIAN

Medical progress depends on observation and experimentation. A physician must be a servant and an "interpreter of nature." Therefore, the separate training of physicians for clinical medicine and for clinical science is not favored. The application of medical training should depend on psychological attributes. "Self-confidence is . . . essential to the practice of medicine, for it breeds confidence, faith, and hope. Diffidence . . . is an essential quality in investigation, for it breeds inquiry." However, "the contention that observational and experimental skills are incompatible is untenable."

The only individual competent to direct the care of the patient is the physician. When he attempts this by merely studying the reports of assistants who take the x-ray photographs, the blood pressure reading, etc., the practice of medicine becomes "futile and ineffective." The physician must "preserve his clinical acumen as he accepts and extends the application of newer laboratory methods" but he must also "avoid the impersonality of the laboratory."

Accuracy of clinical observation is becoming rare and is "increasingly apparent in the welter of laboratory data, relevant and irrelevant, that so frequently clutters papers in the medical journals."

The ability to make an accurate diagnosis and prognosis is vital in the practice of medicine. "Its cultivation and acquisition are avidly pursued by all clinicians worthy of the name." Experience quickens the analytical process which eventually is "largely carried on subconsciously." It requires "minute and careful clinical observation, a good visual memory, and . . . inquisitiveness about the subsequent course" such as is provided by the systematized follow-up inquiry.

The veterinarian too must be an "interpreter of nature" and, since his patients are the "dumb" animals, the earlier in life he has come in intimate contact with them the better equipped will he be to interpret their problems and to be an adequate "servant" of them.

ABSTRACTS

Manchester Wasting Disease of Cattle

A brief review of the literature on this disease, which is a chronic wasting condition associated with calcific changes in various organs, is followed by a detailed description of the pathological anatomy, gross and microscopic, based on 19 detailed necropsies.

On the basis of the morbid histology, the condition is considered to be identical with "enteque seco" of South America. Some biochemical data are quoted to support the conclusions that the disease represents a form of metastatic calcification associated with an imbalanced mineral intake.—[R. M. Arnold and G. Bras: *Observations on the Morbid Anatomy and Histology of Manchester Wasting Disease of Cattle in Jamaica and Related Conditions in Other Countries of the Americas*. *Am. J. Vet. Res.*, 17, (Oct., 1956): 630-639.]

Immunization of Animals Against *Micrococcus Pyogenes*

A toxoid and a formalin-treated whole culture combined with mineral oil or aluminum hydroxide were used for vaccination of rabbits, sheep, and cattle. The toxoid and the culture vaccine gave similar protection in rabbits. The degree of protection increased with larger doses. Eight of 9 vaccinated cattle developed high antihemolysin titers and detectable antibodies persisted at least 14 weeks.

Intramammary inoculation of cows with living culture resulted in mastitis which was more severe and acute in 2 controls than in 4 vaccinated animals, but a chronic infection developed following challenge in nine of the 16 quarters of vaccinated cows. Vaccination of sheep resulted in low titers and no evidence of increased resistance to subsequent intramammary injection of living culture.

Either mineral oil or aluminum hydroxide appeared to enhance the effect of the vaccines and multiple doses were probably more effective than single doses. Bacteriostatic substances, inhibitory to the growth of micrococci, were found in the milk and serum of vaccinated cattle.—[G. R. Spencer, J. H. Stewart, and Janis Lasmanis: *Preliminary Report on Immunization of Animals Against Micrococcus Pyogenes*. *Am. J. Vet. Res.*, 17, (Oct., 1956): 594-598.]

Tube-Agglutination Test for Leptospirosis

Details are given for the preparation of antigens for use in the routine diagnosis of leptospirosis. *Leptospira* organisms were propagated in

culture medium and formalized when maximum growth had been obtained. In performing the test, tenfold dilutions of the serum in saline were mixed with the appropriate antigens and were incubated. A grossly visible floccule in the bottom of the cone-shaped tubes denoted a positive reaction.

An evaluation of the agglutination test was made by the routine testing of 7,313 serums during a five-year period. The test was highly specific for leptospiral infections. Serums containing antibodies to various bovine, porcine, and canine diseases failed to agglutinate leptospiral antigens. The test compared favorably with the classical agglutination-lysis test.—[J. A. Howarth: *A Macroscopic Tube-Agglutination Test for Leptospirosis*. *Am. J. Vet. Res.*, 17, (Oct., 1956): 789-792.]

Control of Parasites and Pests in Animal Houses

The term "aerosol" is defined and the technique of the continuous-flow aerosol is described. Its application to pest control is described with particular reference to animal parasites.

The continuous-flow aerosol, because of the particle size of the released chemical, causes greater penetration than any other method of application. It is automatic and labor saving.

Together with the use of urea-formaldehyde lacquers containing insecticides, an effective program to eliminate arthropod pests can be instituted. The use of continuous-flow aerosols for the control of air-borne bacterial and viral diseases is also discussed.—[A. H. Baker and F. G. S. Whitfield: *The Control of Parasites and Pests in Animal Houses and Food Stores*. *J. Anim. Tech.*, 7, (1956): 36-42.]—N. R. BREWER.

FOREIGN ABSTRACTS

Brucellosis in Hares

Seven cases of *Brucella* infection in hares in Germany are described. Inflammation of testicles and spleen with necrosis and abscess formations were considered as pathognomonic symptoms.

An epidemiological connections has been found between ovine and porcine brucellosis and the hare *Brucella* infection. The author expressed the opinion that sheep could be infected from hares.—[K. Fritzsche: *Brucellosis in Hares in Germany*. *Berl. und Münch. tierärztl. Wchenschr.*, 16, (1956): 301.]—F. KRAL.

Crystal Violet Vaccine for Hog Cholera Control

Crystal violet vaccines prepared from the blood of pigs infected with the classical and an aberrant strain of hog cholera virus were prepared. Vaccines prepared from each strain protected against the homologous strain but not against the heterologous strain. Crystal violet vaccine containing blood from both strains protected completely against both viruses. Two injections at an interval

Correction in Editorial

In the last line of the editorial, "Practical Field Research" (Nov. 15, p. 491), the word *surgery* is an error. The last line should read: "practical research, and should report it."

of 15 days produced some what better immunity against both strains. The use of crystal violet vaccine and anti-hog cholera serum produced little immunity unless followed by a second injection of vaccine. The vaccine-serum method is suggested for use in infected herds.—[A. Lucas, G. Bouley, C. Quincebon, and J. Gourdon: *The Use of Crystal Violet Vaccines in the Control of Hog Cholera. Rec. méd. vét. d'Alfort*, 132, (1956): 456-467.]—J. P. SCOTT.

Control of Hog Cholera in Switzerland

Until 1940, the incidence of hog cholera was high. After the introduction of vaccination, using a virulent virus and antiserum, the disease was reasonably reduced. Further reduction has followed the use of crystal violet vaccine. In the last three years, a lapinized vaccine has also been used. A satisfactory solution for the prevention of contamination by infected garbage has not been found.—[W. Leeman: *The Fight Against Hog Cholera in Switzerland. Off. Internat. des Epizoot.*, 46, (1956): 122-133.]—J. P. SCOTT.

British Journal Changes Its Name

The Council of Biological and Medical Abstracts Ltd., publishers of *British Abstracts of Medical Sciences*, has announced a change in the name of the publication to *International Abstracts of Biological Sciences*. The reasons given are that the coverage of biological research subjects throughout the world has been widened and that abstracts of Russian papers will be included and will appear simultaneously with the publication of the papers in Russian journals. The changes are effective with the January, 1957, issue.

BOOKS AND REPORTS

Veterinary Parasitology

This is the first edition of an exhaustive discourse on the subject of veterinary parasitology. The text is a liberally illustrated account of protozoan, helminth, and arthropod parasites of importance in veterinary medicine. The influence of the author's experiences in teaching zoology for a quarter of a century is reflected in the anatomical and biological details included in this excellently written text.

Somewhat more emphasis is given to the anatomical and biological presentation than to the pathological manifestations produced by the parasite. More emphasis is given to parasitic conditions important in the British farm animals.

While it is recognized that there is not at this time complete unanimity with respect to parasitological nomenclature, some of the terminology of this work would not be commonly used among many of our parasitologists. Very little stress is placed on clinical and diagnostic methods most used.

We think that parasitologists, veterinary parasitologists, and teachers of veterinary parasitology would welcome this addition to the field of veterinary parasitological literature. The student might find it too voluminous for a course textbook but would find it an excellent reference for anatomical and biological detail. The veterinary practitioner would probably not find it a handy reference for his numerous parasitological inquiries.—[*Veterinary Parasitology*. By Geoffrey LaPage. 964 pages. 494 illustrations. Charles C Thomas, Springfield, Ill. 1956. Price \$12.75.]—T. S. WILLIAMS.

Pregnancy in Cattle

The diagnosis of pregnancy is an important obstetrical and economical question. It, therefore, should be recognized in the earliest possible stage.

In the first chapters of this publication, the anatomical relations and physiological functions of reproductive organs of cattle are discussed.

The main part of the book deals with the practical clinical methods of pregnancy diagnosis by external, rectal, and vaginal examination in various stages of pregnancy. Rectally, it is possible to recognize pregnancy in the cow at 30 to 45 days.

The last chapter briefly mentions some laboratory methods, such as biochemical and optical tests, sedimentation and hormonal tests, which could be used for the diagnosis of pregnancy; however, they have no practical importance.

The text is clearly written and is supplemented with good illustrations. It would serve as a good source of information for students of veterinary medicine and for practitioners.—[*The Diagnosis of Pregnancy in Cattle. (Die Schwangerschaftsdiagnose beim Rind.)* By H. Richter-Tillman. 107 pages. 47 illustrations. Paul Parey, Berlin and Hamburg, Germany. Price DM \$9.60.] F. KRAL.

The JOURNAL Needs Abstractors

The AVMA receives many foreign periodicals, some of which are abstracted for the JOURNAL by veterinarians who give generously of their time.

At present, our Dutch, Scandinavian, Greek, Turkish, and Chinese journals are not abstracted for the "Current Literature" section. The late Dr. Leunis Van Es, of Omaha, Neb., abstracted the Dutch journals for many years.

The JOURNAL will appreciate inquiries from those who have the time to abstract in any of the languages mentioned. No compensation has ever been provided other than the foreign journals for the abstractor's files.

Dr. Monlux Appointed Head of Department of Pathology at Oklahoma

Dr. Andrew W. Monlux (ISC '42) has been appointed head of the Department of Veterinary Pathology, School of Veterinary Medicine, at Oklahoma A. & M. College, Stillwater.

After receiving his D.V.M. degree, Dr. Monlux practiced for a while at Woden, Iowa, and then



Dr. Andrew W. Monlux

served in the Veterinary Corps, U. S. Army, until 1946 when he returned to Iowa State College where he received his M.S. degree in 1948. He was then granted an AVMA research fellowship to study at the Armed Forces Institute of Pathology and George Washington University in Washington, D. C. He was granted his Ph.D. degree in 1951. His thesis, "The Histopathology of Nephritis in the Dog," was published in the *American Journal of Veterinary Research* (July, 1953: 425-447). Since then, Dr. Monlux has served with the Branch Pathological Laboratory, Pathological Division, ARS, at the Denver Federal Center, where he has investigated the pathology of neoplastic, infectious, nutritional, and degenerative diseases of our domesticated food-producing animals.

Dr. Monlux is a member of the AVMA and has served as chairman of the AVMA Committee on Registry of Veterinary Pathology, Armed Forces Institute of Pathology. In addition to his thesis, he has been author or co-author of several other scientific articles including "Leptospirosis in Hogs" (*North Am. Vet.*, July, 1952: 467-469); "Multiple Schwannomas of Cattle" (*Am. J. Vet. Res.*, Oct., 1953: 499-509); "A Survey of Tumors Occurring in Cattle, Sheep, and Swine" (*Am. J. Vet. Res.*, Oct., 1956: 646-677); and "The Diag-

nosis of Squamous Cell Carcinoma of the Eye (Cancer Eye) of Cattle" (*Am. J. Vet. Res.*, Jan., 1957: in press).

Sixtieth Annual Meeting of the U. S. Livestock Sanitary Association

The sixtieth annual meeting of the U. S. Livestock Sanitary Association was held on Nov. 28-30, 1956, at the Morrison Hotel in Chicago, Ill.

The program included the following speakers and their subjects: T. O. Roby, W. H. Martin, G. W. Gates, and P. A. Madden, Beltsville, Md. (complement-fixation test); J. F. Christensen, Davis, Calif. (anaplasmosis); C. D. Van Houweling, Washington, D. C. (federal meat inspection); L. D. S. Smith, Bozeman, Mont. (bacillary hemoglobinuria); T. Burnstein and S. F. Scheidt, West Point, Pa. (leptospirosis bacterin); C. J. York and A. J. Schwartz, Indianapolis, Ind. (infectious rhinotracheitis); F. L. Herchenroeder, Fort Worth, Texas (foreign animal diseases); J. P. Torrey and M. R. Zinaber, Ames, Iowa (hog cholera vaccine); J. L. Hourrigan, Washington, D. C. (sheep and cattle scabies); J. E. Doran, Columbus, Ohio (sheep and cattle scabies); W. R. Dunlop, Durham, N. H. (PPLO); E. L. Jungherr, W. Chomiak, and R. E. Lunginbuhl, Storrs, Conn. (infectious bronchitis); L. E. Starr and R. L. Watson, Atlanta, Ga. (rabies control in Georgia); C. K. Mingle, Washington, D. C. (federal-state brucellosis eradication); E. R. Goode, T. E. Amerault, and C. E. Manthei, Beltsville, Md. (brucellosis); F. C. Stiles, Jr., T. G. White, F. C. Driver, and M. Roepke, St. Paul, Minn. (brucella agglutination reactions); J. S. Andrews, L. A. Spindler, F. L. Earl, and L. S. Diamond, Beltsville, Md. (atrophic rhinitis); A. F. Ranney, Washington, D. C. (federal-state tuberculosis eradication); W. A. Anderson, W. T. Shalkop, and A. B. Larsen, Beltsville, Md. (tuberculin test reactors); R. P. Hanson and L. Karstad, Madison, Wis. (enzootic vesicular stomatitis); R. A. Bankowski, Davis, Calif. (vesicular exanthema virus); C. B. Rice, Hull, Que. (vesicular diseases); and J. M. Hejl, Washington, D. C. (live immunizing agents). s/RALPH A. HENDERSHOTT, Secretary.

U. S. GOVERNMENT

Dr. Jenne Appointed as Foreign Agricultural Affairs Officer.—The Foreign Agricultural Service, U.S.D.A., has announced the appointment of Dr. Herbert J. Jenne (UP '40) as a foreign agricultural affairs officer on Oct. 1, 1956. He has been assigned to the American Consulate General, Frankfurt, Germany, to serve as a member of the staff of the American Agricultural Attache to Germany.

Previously, Dr. Jenne was on the staff of the ARS, U.S.D.A., with assignments in Washing-

ton and Germany. Prior to 1950, he was chief of the Bureau of Brucellosis Control of the New Jersey Department of Agriculture.

• • •
Dr. Herl Retires.—Dr. Oren E. Herl retired on Oct. 31, 1956, after serving more than 40 years with the U. S. Department of Agriculture.



Dr. Oren Herl

After receiving his D.V.M. degree, in 1916, from the School of Veterinary Medicine, Ohio State University, he accepted an appointment with the meat inspection staff of the BAI, U.S.D.A., in Fort Worth, Texas. Dr. Herl's primary interest was in the field of veterinary biological products and his assignments, in later years, covered various positions including chief of the Virus-Serum Control Division, BAI, Washington, D. C., head of the biological products licensing section of the Animal Inspection and Quarantine Branch. His last assignment was assistant to the branch chief.

Dr. Herl is an active member of the AVMA, the U. S. Livestock Sanitary Association, and the District of Columbia Veterinary Medical Association. Dr. and Mrs. Herl now reside in Upper Arlington, Columbus, Ohio.

• • •
Dr. Manley Heads Wyoming Disease Eradication Activities.—Dr. David O. Manley (KSC '41) has been appointed veterinarian in charge of the U.S.D.A. animal disease eradication activities in Cheyenne, Wyo., effective Oct. 25, 1956.

Dr. Manley was formerly stationed in Bismarck, N. Dak., as assistant veterinarian in charge of animal disease eradication activities for the U.S.D.A. in North Dakota, a post he had held since November, 1952. In his new assignment, he will be responsible for administer-

ing programs dealing with control and eradication of brucellosis and tuberculosis of cattle, sheep and cattle scabies, bluetongue of sheep, and other major diseases of livestock.

• • •
Dr. Omohundro Named Consultant on Poultry Diseases.—Dr. Richard E. Omohundro, chief of the poultry disease eradication section of the Animal Disease Eradication Branch of the Agricultural Research Service, U.S.D.A., will assist representatives of the U.S.D.A. Foreign Agricultural Service in a market development program on poultry and eggs from the United States. In Colombia, Venezuela, and Peru, South America, Dr. Omohundro will discuss the various aspects of poultry disease and control and import and export regulations needed to insure the health of imported poultry and exported cattle.

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Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U.S.D.A. are reported as of Oct. 26, 1956.

TRANSFERS

William J. Clements, from Indianapolis, Ind., to Buffalo, N.Y.

Cassius A. Collins, from Denton, Md., to Dover, Del.
George V. Conn, from Riverbank, Calif., to Turlock, Calif.

George Cunningham, from Chicago, Ill., to Union, Mo.
King S. Daniels, from Chicago, Ill., to Vineta, Park, Mo.

Alexander Don, from Berlin, Md., to Georgetown, Del.
Gerald R. Fuller, from Fort Worth, Texas, to Little Rock, Ark.

Robert A. Gale, from Tallahassee, Fla., to New York, N.Y.

Cloyde L. Gooding, from Washington, D.C., to Sacramento, Calif.

Wynter C. Graber, from Knoxville, Tenn., to Chicago, Ill.

Arthur W. Groth, from Watertown, S. Dak., to Worthington, Minn.

John Halij, from Winchester, Va., to Norma, N. J.

William P. Henninger, from Stanley, Va., to Pittsburgh, Pa.

Harold C. King, from Des Moines, Iowa, to Washington, D. C.

John V. Lange, from DeQueen, Ark., to Chicago, Ill.
Werner Langheinrich, from Green Bay, Wis., to Paso Robles, Calif.

David O. Manley, from Bismarck, N. Dak., to Cheyenne, Wyo.

William A. McDonald, from Sacramento, Calif., to Little Rock, Ark.

Frank J. Mitchell, from Fontana, Calif., to Los Angeles, Calif.

M. A. Nelson, from Chicago, Ill., to Johnson Creek, Wis.

Myron A. Nelson, from Dosesto, Calif., to Fontana, Calif.

Eric H. Nordstrom, from Topeka, Kan., to Albuquerque, N. M.

Lewis L. Norvill, from Shelby, Mo., to Berryville, Ark.

Richard E. Omohundro, from Jefferson City, Mo., to Washington, D.C.

Ado Pool, from Modesto, Calif., to Portland, Calif.

Julian Sonewycky, from Gainesville, Ga., to Bentonville, Ark.

Boris Sulima, from Camden, N. J., to Frankford, Del.

Glenn B. Van Ness, from Beltsville, Md., to Washington, D. C.

Wladimir Wacyk, from Harrisonburg, Va., to Stanley, Va.

Michael J. Williams, from Oxford, Neb., to Worthington, Minn.

Asa Winter, from Washington, D.C., to Lansing, Mich.
Robert Ziriax, Jr., from Albuquerque, N. M., to Trenton, N. J.

DEATHS

Ralph Carmack, Monroe, N. Car.

Walter L. Parrott, Dover, Del.

Virgil W. Woolen, Eau Claire, Wis.

AMONG THE STATES AND PROVINCES

California

Mid-Coast Association.—At the Oct. 18, 1956, meeting of the Mid-Coast Veterinary Medical Association, the following officers were elected for the 1956-1957 term: William C. Smart, Lompoc, president; Richard G. Ainley, Santa Maria, vice-president; and W. H. Rockey, San Luis Obispo, secretary-treasurer.

Subjects discussed at the meeting included the use of the treatment of feedlot animals with hormone therapy to increase weight gains and the use of hormone therapy on newborn calves.

s/W. H. ROCKEY, *Secretary*.

Colorado

J. W. Tobiska Dies.—Joseph W. Tobiska, a chemist for the Colorado A. & M. College and its Agricultural Experiment Station for 36 years, was stricken with a heart attack while at work on Oct. 26, 1956. He died a short time later.

Last year, Mr. Tobiska received an engraved plaque in appreciation of his services to veterinary medicine. He was also made an associate member of the Colorado Veterinary Medical Association in recognition of his research for the college and practitioners throughout the state.

He is survived by his widow, two daughters, and a son.

Florida

Volusia County Veterinarians Organize.—On Oct. 25, 1956, the veterinarians of Volusia County, Florida, met in Daytona Beach to organize the Volusia County Veterinary Medical Association. Officers elected for the ensuing term are B. H. Rawls, Daytona Beach, president; Frank Stoudenmire, DeLand, vice-president; and A. E. Hixon, Daytona Beach, secretary-treasurer. Regular meetings were set for the fourth Thursday in each month.

s/A. E. HIXON, *Secretary*.

Illinois

Mississippi Valley Association.—The fifty-second annual convention of the Mississippi Valley Veterinary Medical Association was held in the Hotel Pere Marquette, Peoria, Ill., on Nov. 7-8, 1956.

The program included the following speakers

and their subjects: John C. Thompson, Ralston-Purina Co., St. Louis, Mo. (ruminant nutrition); Arthur A. Case, University of Missouri, Columbia (poisonous plants); Damon V. Catron, Iowa State College, Ames (swine nutrition); William A. Albrecht, University of Missouri, Columbia (defense of the cow); L. D. Jones, Corr. State Laboratories, Omaha, Neb. (swine erysipelas); Durwood L. Baker, Iowa State College, Ames (small animal procedures); C. A. Brandly, University of Illinois, Urbana (practice and research); R. J. Kirkpatrick, Galesburg, Ill. (beef cattle practice); and E. A. Benbrook, Iowa State College, Ames, (parasitism).

s/WILLIAM L. BEER, *Secretary*.

Iowa

Midwest Small Animal Association.—The nineteenth annual meeting of the Midwest Small Animal Association was held in conjunction with the regional meeting of the American Animal Hospital Association on Nov. 18-19, 1956, at the Hotel Burlington, Burlington, Iowa.

The program included the following speakers and their subjects: David L. Coffin, New York, N. Y. (blood chemistry); Dean S. Folse, Kansas State College, Manhattan (postmortem findings); S. W. Haigler, St. Louis, Mo. (hospital merchandising); Arthur R. Theobald, Cincinnati, Ohio (hospital economics); R. H. Gump, Wichita, Kan. (hospital service); Darrell S. Steele, Minneapolis, Minn. (feline patients); Richard A. Huebner, Wyeth Laboratories, Philadelphia, Pa. (tranquilizing drugs); Jacob C. Siegrist, Schering Corp., Bloomfield, N. J. (corticoid steroids); Timothy H. Brasmer, Danville, Ill. (surgical procedures); George W. Mather, University of Minnesota, St. Paul (canine geriatrics); R. E. Evans, Iowa City, Iowa (antibiotic sensitivity tests); Jacob E. Mosier, Kansas State College, Manhattan (canine kidney conditions); and a panel discussion on providing methods for better hospital service moderated by Wayne H. Riser, Skokie, Ill.

A catfish dinner and a banquet, at which Dr. Alan Bachrach, Philadelphia, Pa., was the speaker, were enjoyed by all who attended.

s/J. PORTER COBLE, *Secretary*.

• • •
Eastern Iowa Association.—New officers elected at the forty-third annual meeting of the Eastern Iowa Veterinary Medical Association held Oct. 4-5, 1956, at the Hotel Montrose, Cedar Rapids, are Robert E. Savage, Monticello, president; L. A. Fraser, Iowa City, vice-president; F. E. Brutsmann, Traer, secretary; William M. Lynch, Cedar Rapids, treasurer; and Merrill Vanderloo was elected to the board of trustees.

s/GRANT B. MUNGER.

Louisiana

State Association.—At the fifth annual fall meeting of the Louisiana Veterinary Medical Association held in New Orleans on Aug. 29-

30, 1956, the following speakers participated in the program: W. H. Riser, Skokie, Ill.; D. R. Peterson, Oklahoma A.&M. College, Stillwater; C. H. Cooper, Jensen-Salsbery Laboratories, Kansas City, Mo.; Floyd Cross, Fort Collins, Colo., president, AVMA; and W. C. Banks, Texas A. & M. College, College Station.

Newly elected officers are W. M. Pounds, New Orleans, president; J. N. Thomas, Welsh, vice-president; O. C. Granzin, Baton Rouge, treasurer; and A. M. Stefanski, Crowley, secretary.

S/A. M. STEFANSKI, *Secretary*.

Massachusetts

Western Association.—The regular quarterly meeting of the Western Massachusetts Veterinary Medical Association was held at the Officers' Club, Westover Air Force Base, on Sept. 26, 1956. After a tour of the base, dinner was enjoyed at the club. Speakers for the evening were Major Wimpy and Captain Keller, their topic being "Military Veterinarian."

S/STEWART K. HARVEY.

Mississippi

State Association.—At a recent meeting of the Mississippi State Veterinary Medical Association, the following officers were elected for the 1956-1957 term: George B. Bradshaw, Macon, president; Jack B. Ross, Jackson, president-elect; James W. Patterson, Columbia, vice-president; and H. F. McCrory, State College, secretary-treasurer.

S/HARVEY F. MCCRORY, *Secretary*.

Dr. Stinson, Director of Livestock Production and Prison Veterinarian.—Dr. K. K. Stinson (OKL '54), of Parchman, is believed to be the first veterinarian employed full time by a penitentiary. The Mississippi State Penitentiary at Parchman, with an average population of 2,100 inmates and 170 employees and their families, raises all of their needed animal food prod-



Dr. Stinson, with his trusty helper, treats one of 700 mules for colic. Two convicts help control the 1,600-lb. mule. Dr. Stinson's radio-equipped truck and part of one of 12 camps appears in background.

ucts. The livestock includes approximately 4,000 swine, 500 Jersey dairy cattle (210 to 230 of which are producing milk), 900 Shorthorn cattle, and about 1,000 horses and mules including 4 jacks and 3 stallions. The mule herd, one of the largest left in the United States, and the guard and driver horses, most of them Tennessee Walkers, are all raised on the premises. A poultry flock which will consist of 5,000 to 7,000 hens is being built up. The prison also maintains about 35 bloodhounds.

The cows are milked in a modern barn and the milk is pasteurized in a modern plant and refrigerator room. Dressed carcasses are trucked from the prison slaughterhouse to a well-equipped packing and cold storage plant and the hams and bacon are processed in the latest method.

The farming of the 25,000 acres is done almost entirely with convict labor, using horses and mules. It provides the feed for all the livestock except for some concentrate and cotton seed meal for the dairy cows.

Dr. Stinson has a trusty as full-time helper.

New Jersey

Metropolitan Association.—The Nov. 28, 1956, meeting of the Metropolitan New Jersey Veterinary Medical Association was held at the Hotel Essex House, Newark. The subject of fundamental technical procedures in canine surgery was discussed by J. Markowitz, M.D., Faculty of Medicine, University of Toronto, Toronto, Ont.

A reception for the staff of the Margaret M. Caspary Center for Veterinary Research, New York, N.Y., and a cocktail party were enjoyed by all who attended.

S/MYRON S. ARLEIN, *Secretary*.

Quebec

Quebec Society.—The annual meeting of the Society of Veterinary Medicine of the Province of Quebec was recently held in the University Circle in Montreal.

The program included the following speakers: Paul Marois, University of Montreal (monkeys in biological experimentation) and André Lagacé, School of Veterinary Medicine, St. Hyacinthe (fungus infections).

The following are the officers elected for the 1957 term: Roland Filion, St. Hyacinthe, president; Paul Marois, Ville St. Michel, first vice-president; J. D. Nadeau, Douville, second vice-president; Guy Cousineau, St. Hilaire, secretary-treasurer; Jacques St. Georges, St. Hyacinthe, secretary-adjoint; and Martin Trépanier, Douville, and Marcel Picard, L'Epiphanie, censors.

S/JACQUES ST. GEORGES, *Secretary*.

Washington

State Association.—The forty-first annual convention of the Washington State Veterinary

Medical Association was held on Sept. 21-22, 1956, at the Davenport Hotel in Spokane.

The following were program participants: C. J. York, Pitman-Moore Co., Indianapolis, Ind. (canine virus diseases); G. H. Keown, Washington State College, Pullman (equine case reports); D. F. M. Bunce, II, Chicago Pharmacal Co., Chicago, Ill. (ophthalmoscope); H. D. Simpson, Iowa State College, Ames (canine ocular surgery); G. E. Hawley, Charles Pfizer and Co., Terre Haute, Ind. (mucosal diseases of cattle).

At the business session, the following officers were elected for the ensuing term: Irwin Erickson, Puyallup, president; George Duby, Centralia, president-elect; H. Warsinski, Stanwood, treasurer; and W. Harris, Puyallup, secretary. s/W. HARRIS, Secretary.

Wisconsin

Northeastern Association.—The annual meeting of the Northeastern Wisconsin Veterinary Medical Association was held at the Elks Club, Appleton, on Sept. 19, 1956. Fifty-five veterinarians and their wives attended.

During the business session, the following officers were elected for the ensuing term: O. W. Meyer, Manitowoc, president; Carl D. Olsen, Kewaunee, vice-president; and Henry I. Landskron, Larsen, trustee.

Dr. T. L. Knapstein, Greenville, demonstrated a new embryotomy instrument and the removal of metal with a magnetic retriever; G. E. Blake, Madison, reported on disease control, emphasizing brucellosis and tuberculosis eradication. The dinner speaker was Ralph T. Alton, Appleton.

s/WILLIAM MADSON, Secretary.

VETERINARY MILITARY SERVICE

Colonel Hale Retires.—Colonel Maurice W. Hale, who has retired from the U. S. Army after 30 years of active military duty, has been awarded a certificate of achievement for out-



Major General Leonard D. Heaton (left) presenting the certificate of achievement to Colonel Maurice W. Hale.

standing work as director of the Division of Veterinary Medicine at Walter Reed Army Hospital, Washington, D. C.

Colonel Hale has accepted a position as head of the Animal Disease Department of the Georgia Coastal Plain Experimental Station in Tifton, Ga. He is a member of the AVMA, the Society of American Bacteriologists, and the American Association for the Advancement of Science.

STATE BOARD EXAMINATIONS

Tennessee.—The Tennessee State Board of Medical Examiners will hold its annual meeting on June 24-25, 1957, in Room 509, State Office Building, Nashville 3, Tenn. Requests for further information should be addressed to W. O. Greene, secretary, Tennessee Board of Veterinary Medical Examiners, State Office Building, Nashville 3, Tenn.

DEATHS

★**James A. Campbell** (ONT '00), 76, Toronto, Ont., died on Oct. 25, 1956, after a long illness.

Born Feb. 10, 1880, in India, Dr. Campbell received his early education in England, came to Canada in 1899 and, after graduating from Ontario Veterinary College, practiced in Toronto until 1946. He had also been curator of Riverdale and High Park zoos for more than 30 years and was widely known in the zoological field, being a fellow of the Zoological Societies of London, England, and Dublin. He was also consulting veterinarian for the Toronto Humane Society and had been veterinary surgeon for the Canadian National Exhibition.

Dr. Campbell was a most colorful, well-liked, and respected veterinarian and a member of many kennel clubs. At one time, he was a member of the Senate of the University of Toronto and in his latter years lectured at Ontario Veterinary College.

He held membership in various professional associations, was a vice-president of the AVMA in 1932-1933 and 1936-1937 and at the time of his death was a life member of the Association. He was also a charter member of the Toronto Rotary Club.

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★**George W. Grim** (UP '16), 63, Merion, Pa., died late in October. Born at Doylestown, Pa., Sept. 1, 1893, Dr. Grim devoted most of his life after graduating in veterinary medicine to milk sanitation work and was a recognized authority in that field. At the time of his death, he was milk control officer of a district comprising several suburban townships near Philadelphia.

Dr. Grim was a past-president of the International Association of Milk and Food Sanitari-

ans, was chairman of the public health committee of the Pennsylvania V.M.A., and a fellow of the American Public Health Association.

Surviving are his widow, a son, two stepsons, and a sister.

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R. M. Allen (CVC '03), 79, Marshalltown, Iowa, died Aug. 24, 1956. Dr. Allen had retired some years ago.

Leslie H. Baker (KCV '14), 64, Fort Worth, Texas, died Aug. 31, 1956. Dr. Baker, a veteran of World War II, had served with the U. S. Department of Agriculture.

★**Walter C. Bateman** (IND '13), 67, San Bernardino, Calif., died Sept. 25, 1956. Dr. Bateman had lived in San Bernardino for 34 years, and had served as county veterinarian for 28 years, retiring July 1, 1956. During his years of service with the county, Dr. Bateman was a leader in rabies and livestock disease control. His cattle inspection program was the first of its type in the state. Dr. Bateman, a veteran of World War I, was a member of the AVMA, California State Veterinary Medical Association, San Bernardino County Farm Bureau, California Department of Agriculture, and Department of Livestock Control. He is survived by his widow, two sons, and two granddaughters.

★**Marvin L. Biggs** (COL '55), 28, Pocatello, Idaho, died Oct. 3, 1956, from injuries received in an automobile accident. Dr. Biggs was a veteran of World War II and at the time of his death was practicing with Dr. J. G. Hayden. He was a member of the AVMA. His widow and mother survive.

Wilmer B. Billingsley (USC '11), 70, Towson, Md., died Oct. 9, 1956. Dr. Billingsley had served with the Maryland Food and Drug Department.

★**Wallace L. Derrer** (CHI '20), 61, Mt. Carroll, Ill., died Sept. 25, 1956. Dr. Derrer was a general practitioner. He was admitted to the AVMA in 1942.

★**Charles W. Fogle** (ONT '07), 70, Leipsic, Ohio, died Sept. 27, 1956. Dr. Fogle was active in state and community affairs. He had served with the State Board of Agriculture for nine years, three terms as a member of the Ohio State Board of Veterinary Examiners, was past-president of the Ohio State Veterinary Medical Association, and was instrumental in securing the first practice act by the Ohio State Legislature.

Dr. Fogle was a life member of the AVMA. His son, Dr. C. W. Fogle, Jr. (OSU '51), also of Leipsic, survives.

Joseph A. Fowler (ONT '11), Sussex, N. B., died in November, 1955.

George W. Higginson (ONT '98), 86, Ottawa, Ont., died July 16, 1956. Dr. Higginson had served with the Department of Health and Animals Division for 34 years. He retired in 1939. His widow, a son, four daughters, twenty-

three grandchildren, and six great grandchildren survive.

Harry D. Hooge (CIN '18), 63, Bloomington, Ind., died Sept. 22, 1956. Dr. Hooge had practiced in Pennsylvania and Martinsville, Ind., before coming to Bloomington. His survivors include his widow, a daughter, and three sons.

★**John A. Jaeger** (MCK '16), 73, West Concord, Minn., died May 16, 1956. Dr. Jaeger, a general practitioner, was a member of the AVMA. His widow, two daughters, and a brother, Dr. G. F. Yager (MCK '15), Sauk Centre, survive.

Henry F. Kirkby (ONT '06), Belgrave, Ont., died recently.

Fred C. Krowl, 95, Elmira, N. Y., died Aug. 10, 1956. Dr. Krowl had practiced in Elmira from 1886 until his retirement in 1947. Dr. Krowl's wife and his son, also a veterinarian, preceded him in death.

J. D. McGregor (ONT '89), Butte, Mont., died Aug. 30, 1956, following a two-month illness. Dr. McGregor is survived by two daughters and two granddaughters.

Earl G. Morningstar (CIN '15), 68, St. Paris, Ohio, died Sept. 26, 1957. Dr. Morningstar had practiced in the St. Paris area for 38 years prior to his retirement in 1946. His widow and a son survive.

★**J. M. Newby** (CVC '10), 64, Mount Hamill, Iowa, died July 31, 1956. Dr. Newby had practiced in Mount Hamill for 47 years. He was a member of the AVMA.

Roy E. Patterson (ISC '23), Memphis, Tenn., died in July, 1956. Dr. Patterson was employed by the ARS, U. S. Department of Agriculture.

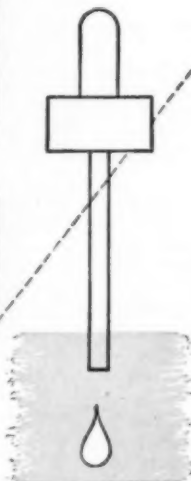
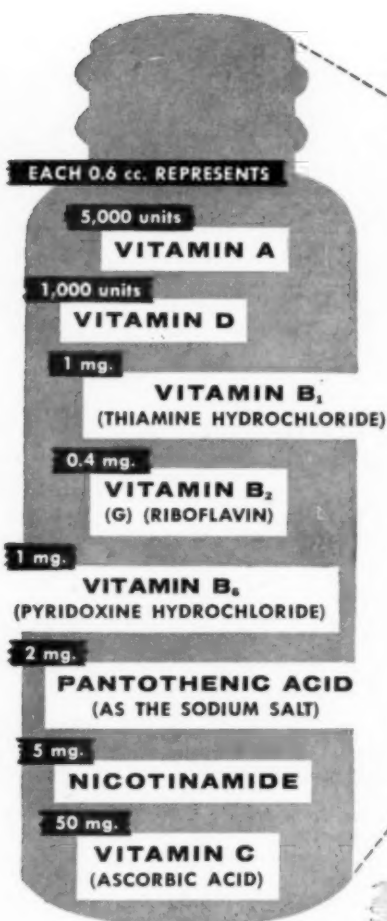
Ralph W. Schlenker (KCV '10), 67, Celina, Ohio, died Aug. 21, 1956. Dr. Schlenker had practiced in Celina for more than 46 years. He had served in World War I and also as personal military aide to the governor.

A. W. Sutherland (OVC '80), 70, Andes, N. Y., died on Aug. 4, 1956. Dr. Sutherland practiced in Connecticut for 14 years before joining the BAI. Later, he was engaged in practice in Andes. He had been a member of the AVMA. Survivors are his widow and a brother.

★**Virgil W. Woolen** (COL '21), 60, Eau Claire, Wis., died Sept. 26, 1956. Dr. Woolen was inspector in charge of federal meat inspection in Eau Claire for 25 years. Prior to that he had served with the BAI in South St. Paul. He was a member of the National Association of Federal Veterinarians and had been a member of the AVMA for 25 years.

Death Reported in Error.—The report of the death of Dr. V. V. Martinson (Nov. 1, 1956, JOURNAL, p. 446), reported to us by the post office, is in error. Dr. Martinson is now at 2478 North 83rd St., Wauwatosa, Wis.

★Indicates members of the AVMA.



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ORGANIZATION SECTION

Questions and Answers on Social Security

1) **Question**—Dr. Brown reached age 65 in January and has decided to retire next April after acquiring six quarters of coverage under Social Security.

a) How does Dr. Brown apply for Social Security benefits?

b) If Dr. Brown decides to resume practice after receiving a number of monthly benefits in 1957, should he request suspension of benefits immediately or wait until the end of the calendar year to determine his eligibility?

Answer—(a) If Dr. Brown retires in April, 1957, he should call at the Social Security office nearest his home with a copy of his 1956 income tax return and present evidence of his having paid the self-employment tax for 1956. He will have acquired six (6) quarters of coverage as of April, 1957, provided he has net earnings of at least \$400 at the time of his retirement. He should also furnish proof of his age at the time he files his claim for Social Security benefits. His net earnings from his practice in 1957 will be reported when he files his income tax return in the early part of 1958.

(b) If Dr. Brown decides to resume his practice, he should immediately notify the Social Security Administration if his net earnings for 1957 will exceed \$1,200. His benefits will be suspended and an adjustment will be made at the end of the year.

2) **Question**—Dr. Black reached age 52 in November, 1956. His net earnings in 1956 were in excess of \$4,200 and the maximum self-employment tax was paid with his individual tax return for 1956. In March, 1957, Dr. Black becomes totally and apparently permanently disabled.

a) Can Dr. Black become eligible for disability benefits?

b) When can Dr. Black become eligible for retirement benefits?

Answer—(a) Dr. Black would not be eligible for disability benefits since he did not work a sufficient length of time to qualify for these payments. In order to qualify for disability insurance payments after age 50, an individual must have Social Security credit for five years of work in the ten years before the onset of his disability, and one and one half years of work in the three years before that date.

b) If Dr. Black has net earnings of at least \$400 in 1957, he will have acquired a total of eight quarters of coverage, that is, four in 1956 and four in 1957. Since he will become 65 years of age in November, 1959, he requires 37 quarters of coverage in order to be eligible to receive retirement benefits when he becomes 65 years old. Of course, he may have acquired additional quarters of coverage by having worked for someone else in covered employment or he may have military wage credits by virtue of having

served in the Armed Forces during the period Sept. 16, 1940, to Dec. 31, 1956. These additional quarters of coverage may be applied against the total of 37 quarters of coverage which he requires in order to be eligible for retirement benefits at age 65.

STUDENT CHAPTER ACTIVITIES

Kansas Student Auxiliary.—The Women's Auxiliary to the Kansas State College Student Chapter of the AVMA held its first meeting of the year on Oct. 6, 1956. The program included a get-acquainted mixer, at which 43 new members were introduced, and a business meeting.

The major aim of the Auxiliary is to instruct and train wives of future veterinarians to participate actively in their various communities after their husbands are graduated from the School of Veterinary Medicine.

S/CHARLENE GLENN, *Chairman.*

WOMEN'S AUXILIARY

President—Mrs. A. E. Coombs, Box 174, Skowhegan, Me.
Secretary—Mrs. F. R. Booth, 3920 E. Jackson Blvd., Elkhart, Ind.

Mexican Postconvention Tour.—The AVMA postconvention tour to Mexico in which 80 veterinarians and their wives participated was truly an enjoyable adventure. The tour from San Antonio to Mexico City was met with the lusty strains of a colorful Marimba band and a hearty welcome from a delegation of Mexican veterinarians and their wives. We were "pinned" with special ribbon badges in the colors of the Republic, inscribed to indicate that this was the first joint meeting of the members of the profession South of the Border.

Early Saturday morning, we were taken on a sight-seeing bus tour of the beautiful capital city, visiting the National Cathedral and Palace, both rich in early Mexican history, the walls of the latter being richly decorated with murals by the famed Mexican artist, Diego Rivera. We then journeyed to University City, a revelation of beautiful buildings of modern design. Members of the Mexico Veterinary Association and the Auxiliary greeted us and presented the ladies of the party with gorgeous rose corsages. After a tour of the veterinary science building, we gathered in the auditorium for the official adjourned session of the AVMA. Mrs. A. E. Coombs, our own Auxiliary president, and Senora Gertrude K. Valdes Ornelas, president of the Mexican Auxiliary, were seated at the speakers' table. All the guests enjoyed a typically Mexican buffet luncheon in the university restaurant following the meeting. At 7 p.m.,

(Continued on p. 26)



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THE OLD LADY had lost her voice. That rich, vibrant contralto which had rung through opera's golden age was long gone. And she made no bones about it.

Standing at the network microphones, she'd loudly promise her audience: "Don't worry, I'm not going to sing."

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And Ernestine Schumann-Heink had always had that. From the beginning, when she threw away her budding career for love, only to wind up deserted with her four children. Through World War I, when she sang to sell Liberty Bonds while she had sons fighting—on both sides. Right up to the end of her turbulent life, she stayed warm, generous and brave.

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(WOMEN'S AUXILIARY—continued from p. 24)

at the Del Prado Hotel, we were feted at a cocktail party and reception, followed by a dinner honoring members of both associations and other dignitaries.

Sunday morning we motored to the Palace of Fine Arts to view an inspirational presentation of the story of the "Sleeping Woman" volcano formation, depicted by the illumination of the Tiffany glass curtain, the only one of its kind in the world. High fidelity background music and vocal description in both Spanish and English enchained the spectacle. Then, on to Xochimilco to ride on the gayly flower-decorated boats which crowded the canals, numerous other boats following alongside with bands and colorful artistic native products displayed for sale, many pesos changing hands both on the water and shore. A bull fight followed, our driver-escort informing us that this is considered an art, not a sport, throughout the Republic.

With just a few minutes to return to our hotel to freshen up, we moved on to an open-air night club, an ancient landmark in the heart of the city, restored and decorated with native art, where we sampled tequila and were entertained by Mexican dances and spectacular fireworks. Although somewhat exhausted, our spirits were lifted and our bodies replenished at a banquet in one of the finest restaurants.

Monday included a journey to three cattle ranches—the first covering 12,500 acres with a herd of 1,400 Holstein-Friesian and Brown Swiss cattle. A complete laboratory and pasteurizing and bottling plant, under the supervision of a full-time veterinarian, insured safe milk for the people of Mexico City. At the third ranch we glimpsed several rooms of the unique circular home of the owner which surrounded a beautiful patio. The gardens were luxuriant; peacocks roamed about and everyone admired the spacious swimming pool and playground equipment. Tortillas, bouillon, barbecued kid, rolls, and cold drinks were served in the thatched-roof summerhouse.

Doubtless, the most exciting portion of our tour was the 100-mile winding, mountainous drive down through Cuernavaca to Taxco for an overnight stay. The hotels were terraced up the mountainside and were of the required colonial architecture. Visiting the innumerable shops along the cobblestoned streets, where burros, pigs, and chickens roamed freely, was a rewarding experience. Silversmithing, basket-making, and weaving were observed and an abundance of native crafts was available at small cost. The children of the village were ushered into the town square for a program in recognition of U.N. Day.

On our return trip to Mexico City, we stopped for lunch on the outdoor porches of a restored ancient hacienda, now the Hotel Tequesquiteño overlooking the sparkling lake by

the same name (meaning "salted water"). Approximately half of the members of the tour party continued on to Acapulco; however, like natives of all countries, I was happy to board a plane and return to the United States of America.

S/JEANETTE (MRS. H.S.) ATKINS, Editor,
The Auxiliary News.

Officers of the Women's Auxiliary to the AVMA, 1956-1957.—The following officers of the Women's Auxiliary to the AVMA were elected in San Antonio: Mrs. Alfred E. Coombs, P.O. Box 174, Skowhegan, Maine, president; Mrs. Lewis H. Moe, 1814 West Third Ave., Stillwater, Okla., president-elect; Mrs. E. A. Woelffer, 115 Woodland Lane, Oconomowoc, Wis., first vice-president; Mrs. E. E. Leasure, 318 South 17th St., Manhattan, Kan., second vice-president; Mrs. J. I. Cornwell, 65 Beverly Road, Beverly Hills, Asheville, N. Car., third vice-president; Mrs. Frank R. Booth, 3920 East Jackson Blvd., Elkhart, Ind., secretary; Mrs. C. M. Rodgers, P.O. Drawer G, Blandinsville, Ill., membership secretary; Mrs. John D. Stevens, P.O. Box 395, Sequim, Wash., treasurer; Mrs. T. S. Maddox, 109 South Cherry St., Greenville, Ky., recorder; and Mrs. E. N. Moore, 84 Ramdaspeeth Farmland, Nagpur, India, retiring president, in absentia.

S/MRS. FRANK R. BOOTH, Secretary.

Washington Auxiliary.—The Women's Auxiliary to the Washington State Veterinary Medical Association held a meeting on Sept. 21-22, 1956, at the Davenport Hotel in Spokane, in conjunction with the forty-first annual convention of the Washington State Veterinary Medical Association.

The program included a luncheon, fur show, cocktail hour, banquet and dance, and a business meeting.

S/MRS. BARNEY BENEDICTSON, Secretary.

Mississippi Auxiliary.—The nineteenth annual meeting of the Women's Auxiliary to the Mississippi Valley Veterinary Medical Association was held Nov. 7-8, 1956, at the Hotel Pere Marquette, in conjunction with the fifty-second annual convention of the Mississippi Valley Veterinary Medical Association.

The program included a business meeting, tea, buffet dinner, and a brunch.

S/MRS. J. F. PULA, Secretary.

West Virginia Auxiliary.—At the annual business meeting of the Women's Auxiliary to the West Virginia Veterinary Medical Association held at the Chancellor Hotel, Parkersburg, on Oct. 1, 1956, the following officers were elected for the 1956-1957 term: Mrs. Nick Endrizza, Parkersburg, president; Mrs. J. G.

(Continued on p. 28)

Announcing

THE

NEW

**BARBITURATE
ANTAGONIST...**

MIKEDIMIDE*

Methethorimide, PARLAM

TRADEMARK



**FOR BETTER
MANAGEMENT OF
BARBITURATE
ANESTHESIA**

There has long been a need for a highly selective, effective and prompt acting barbiturate antagonist which could be used safely and routinely, particularly in emergency states, to reverse the barbiturate action. Such a need is now fulfilled by *Mikedimide*, a clinically proven new drug which exerts its antagonism on almost all types of barbiturates.

Mikedimide acts promptly to increase respiration, restore reflexes and shorten sleeping time.

Mikedimide has a high therapeutic index, and no signs of toxicity have been observed. Animals can be put to sleep or awakened almost at will, by the alternate use of barbiturate and *Mikedimide* without any apparent harm to the animal.

We present below abstracts of a few typical case reports pertaining to the use of *Mikedimide*:

Morphine sulfate (0.5 gr.) was administered subcutaneously and 3 cc. (180 mg.) of pento barbital sodium was given intravenously to a deep surgical plane. The subject suddenly ceased breathing. The heart was weak and reflexes were absent. Two and one-half minutes after respiratory arrest, 105 mg. of *Mikedimide* was given slowly intravenously. The amplitude of respiratory movements markedly increased. Reflexes returned within one and one-half minutes. The operation and recovery were uneventful. The sleeping time was shortened about two hours.

The patient was in shock and appeared to be a poor surgical risk. A single injection (45 mg.) of pentothal sodium was administered intravenously. Respiration ceased before the injection was completed. The heart was weak and all reflexes were absent. Within 30 seconds after respiratory arrest, 1 cc. (30 mg.) of *Mikedimide* was given intravenously. Respiration was resumed within 15 seconds. The heart became strong and the palpebral reflex returned in one and one-half minutes. Recovery was uneventful.

The patient was anesthetized with surital sodium (480 mg.), given intravenously. Reflexes were absent, respiration was slightly depressed and the heart was strong. Six minutes after anesthesia, *Mikedimide* (120 mg.) was injected slowly intravenously. There was an immediate respiratory response. The palpebral reflex returned at once. At the end of the *Mikedimide* injection, the dog tried to lift his head and sniffed the operating table. Fourteen minutes after the *Mikedimide* injection, the dog was almost conscious. The sleeping time was shortened by 50 percent and recovery was uneventful.

MIKEDIMIDE
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- 1 Emergency treatment for barbiturate overdose and respiratory depression.
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- 4 Shortening sleeping time under anesthesia.
- 5 Respiratory and circulatory supportitive drug in the presence of barbiturates.
- 6 Ambulating an animal shortly after surgery.
- 7 Achieving a "safe plane" of anesthesia during and after prolonged surgery.

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(WOMEN'S AUXILIARY—continued from p. 26)

Spanabel, Fairmont, vice-president; and Mrs. T. P. From, Petersburg, secretary-treasurer.

During the business session, it was decided to contribute to the AVMA Student Loan Fund and to the AVMA Research Fund, and Mrs. V. H. Miller, Charleston, showed her scrapbook on the national and state auxiliaries.

After the meeting, 19 members enjoyed a luncheon at the hotel and a tour of the Fenton Milk Glass Factory.

s/Mrs. T. P. FROM, Secretary.

Game animals were offered for sale by the Fish and Wildlife Service because the population had reached optimum levels on the drought-stricken refuges in the Southwest. Included were 500 buffaloes (\$150), 76 elk (\$90), 110 mule deer, and 151 Longhorn cattle.—*Sci. News Letter*, Oct. 6, 1956.

COMING MEETINGS

American Association of Equine Practitioners. Annual meeting. LaSalle Hotel, Chicago, Ill., Dec. 16-18, 1956. T. E. Dunkin, 1736 E. 71st Pl., Chicago 49, Ill., secretary.

New York State Veterinary College. Annual conference for veterinarians. New York State Veterinary College, Cornell University, Ithaca, Jan. 2-4, 1957. W. A. Hagan, dean.

Pennsylvania, University of. Annual conference for veterinarians. School of Veterinary Medicine, 39th St. and Woodland Ave., Philadelphia, Pa., Jan. 8-9, 1957. M. W. Allam, dean.

Wisconsin Veterinary Medical Association. Annual meeting. Schroeder Hotel, Milwaukee, Jan. 9-11, 1957. B. A. Beach, 1215 Vilas Ave., Madison, Wis., secretary.

Tennessee Veterinary Medical Association. Annual meeting. Memphis, Tenn., Jan. 13-15, 1957. H. W. Hayes, 5009 Clinton Pike, Knoxville, secretary.

Oklahoma Veterinary Medical Association. Annual meeting. Huckins Hotel, Oklahoma City, Jan. 13-15, 1957. M. N. Riemenschneider, 122 State Capitol Building, Oklahoma City, secretary.

Indiana Veterinary Medical Association. Annual meeting. Hotel Severin, Indianapolis, Jan. 16-18, 1957. L. M. Born, 3315 Shelby, Indianapolis, Ind., secretary.

Michigan State University. Conference for veterinarians. College of Veterinary Medicine, East Lansing, Jan. 22-23, 1957. C. F. Clark, dean.

Iowa Veterinary Medical Association. Annual meeting. Hotel Fort Des Moines, Iowa, Jan. 22-24, 1957. F. B. Young, Waukegan, Iowa, secretary.

North Carolina State College. Conference for veterinarians. North Carolina State College, Raleigh, Jan. 22-25, 1957. C. D. Grinnells, chairman.

Maryland State Veterinary Medical Association. Annual meeting. Lord Baltimore Hotel, Baltimore, Jan. 23-24, 1957. John D. Gadd, Cockeysville, Md., secretary.

Intermountain Veterinary Medical Association. Twentieth annual meeting. Hotel Utah, Salt Lake City, Utah, Jan. 24-26, 1957. R. A. Bagley, 2387 East 39th South St., Salt Lake City, Utah, secretary.

Virginia Veterinary Medical Association. Annual meeting. Hotel John Marshall, Richmond, Va., Jan. 27-29, 1957. W. B. Bell, 1303 Hillcrest Dr., Blacksburg, secretary.

California State Veterinary Medical Association. Midwinter conference. School of Veterinary Medicine, University of California, Davis, Jan. 28-30, 1957. Charles S. Travers, 3004 16th St., San Francisco, executive secretary.

Louisiana State University. Conference for veterinarians. Pleasant Hall, Louisiana State University, Baton Rouge, Jan. 29-30, 1957. W. T. Oglesby, head, Department of Veterinary Science.

Minnesota State Veterinary Medical Association. Annual meeting. Radisson Hotel, Minneapolis, Feb. 4-6, 1957. B. S. Pomeroy, 1443 Raymond Ave., St. Paul 8, secretary.

Kansas Veterinary Medical Association. Annual meeting. Lamer Hotel, Salina, Feb. 6-8, 1957. K. Maynard Curtis, 5236 Delmar Ave., Kansas City 3, Kan., secretary.

New Jersey Veterinary Medical Association of. Annual meeting. Berkeley Carteret Hotel, Asbury Park, Feb. 13-14, 1957. J. R. Porteus, P. O. Box 938, Trenton 5, N. J., resident secretary.

Nevada State Veterinary Association. Annual meeting. Ranch Inn, Elko, Feb. 15-16, 1957. W. F. Fisher, 1465 Wells Ave., Reno, Nev., secretary.

Illinois State Veterinary Medical Association. Annual convention. La Salle Hotel, Chicago, Feb. 25-27, 1957. C. B. Hostetler, 1385 Whitcomb Ave., Des Plaines, Ill., executive secretary.

Washington State College. Annual conference for veterinarians. College of Veterinary Medicine, Washington State College, Pullman, April 8-10, 1957. John R. Gorham, chairman.

(Continued on p. 32)

introducing a
new treatment for

- CANINE
TRACHEOBRONCHITIS
- URINARY TRACT
INFECTIONS
of small animals



FURADANTIN is one of the nitrofurans—a unique class of antimicrobials, unrelated to antibiotics or sulfonamides. Like all the nitrofurans, FURADANTIN is bactericidal to a wide range of both gram-negative and gram-positive organisms. It is nontoxic to kidneys, liver and blood-forming organs. Development of bacterial resistance to FURADANTIN is negligible.

In canine tracheobronchitis (kennel cough), FURADANTIN stopped the cough in 11 of 12 dogs within 3 days. Within 1 week, all were fully recovered. There were no recurrences.¹

1. Mosler, J. E.: Vet. M. 50:605, 1955. 2. Brooker, R. S.; Holt, S. H., and Siegel, D.: J. Michigan M. Soc. 54:805, 1955.

Dose: 1 to 2 mg. per lb. of body weight, 3 times daily, for 4 to 7 days.


In urinary tract infections of dogs and cats, FURADANTIN rapidly produces high antibacterial concentrations in urine. As reported on urinary tract infections in humans, "it appears that Furadantin is one of the most effective single agents available at this time."²

Dose: Acute cases: 1 to 2 mg. per lb. of body weight, 3 times daily, for 7 to 10 days or longer. Chronic cases: 2 mg. per lb. of body weight, 3 times daily, for 10 to 14 days or longer.

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1 gm. Progesterone plus 20 mg. Estradiol Benzoate

Today's First and Only

Pellet Implant Developed

Exclusively for Steers!



• Scalpel-type knife makes quick, clean incision, implanter inserts the Synovex implant between skin and cartilage of ear. Each plastic cartridge contains a total of 1 gm. Progesterone and 20 mg. Estradiol Benzoate in 6 pellets which constitutes one Synovex implant.

• Synovex is available in 10-implant and 100-implant packages. Package containing implanter and knife is sold separately.

SYNOVEX is a registered Squibb trademark.

...gives your clients

higher weight gains

higher feed efficiency

lower cost per lb. of gain



1 Insert cartridge in implanter.



2 Clean site of incision.



3 Make incision with special knife.



4 Insert implanter.



5 Implant entire contents of cartridge; place implanter in antiseptic solution between implantations.

SQUIBB IS PLEASED TO INTRODUCE a remarkable new natural hormone pellet implant—SYNOVEX. Tested on 60,000 cattle under commercial feed lot conditions, results prove conclusively that *Synovex stimulates higher weight gains at lower cost per lb. of gain than any other hormone weight-stimulation product now available.*

SYNOVEX CONTAINS 2 POTENT HORMONES, Progesterone and Estradiol. Together these exert a marked physiological effect on steers, resulting in a significantly greater daily rate of gain than either untreated controls, or controls fed identical ration with another hormone product added. Carcass quality is not significantly affected by Synovex.

SYNOVEX IS EASY TO USE. Special plastic cartridge containing one implant (six pellets) of Synovex fits easily into shank of implanter—implanter inserts Synovex between skin and cartilage of ear in single operation. Scalpel-type knife makes quick, clean incision. Synovex is available in 10-implant and 100-implant packages and is recommended for animals weighing from 400 to 1000 lbs., for use during the last 60-150 days of finishing. Synovex goes to work in minutes after implant, and results in marked increase in appetite within seven days. Implant re-

mains effective for 150 days, *boosting weight gains an average of 1/2 lb. per day extra over controls.*

Other advantages of SYNOVEX:

Natural hormones—not synthetic.

No significant difference in carcass quality, dressing percentage, cooler shrink.⁽¹⁾

Higher proportion of lean—less separable fat—than with either untreated controls or controls fed hormone product mixed with feed.⁽¹⁾

Selected animals can be treated without the need for separate feeding programs—separate feed storage facilities—or special feed mixing equipment.

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⁽¹⁾ R. J. Deans, W. J. Van Arsdell, E. P. Reineke and L. J. Bratzler (Michigan Agricultural Experiment Station): The Effect of Progesterone-Estradiol Implants and Stilbestrol Feeding on Feed Lot Performance and Carcass Characteristics of Steers, *Jl. of Animal Science* (In Press).

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Regularly Scheduled Meetings

ALABAMA—Central Alabama Veterinary Association, the first Thursday of each month. B. M. Lauderdale, Montgomery, secretary.

Jefferson County Veterinary Medical Association, the second Thursday of each month. S. A. Price, 213 N. 15th St., Birmingham, secretary.

Mobile-Baldwin Veterinary Medical Association, the first Tuesday of each month. W. David Gross, 771 Holcombe Ave., Mobile, Ala., secretary.

ARIZONA—Central Arizona Veterinary Medical Association, the second Tuesday of each month. Keith T. Maddy, Phoenix, Ariz., secretary.

Southern Arizona Veterinary Medical Association, the third Wednesday of each month at 7:30 p.m. E. T. Anderson, Rt. 2, Box 697, Tucson, Ariz., secretary.

CALIFORNIA—Alameda Contra Costa Veterinary Medical Association, last Wednesday of each month. Leo Goldston, 3793 Broadway, Oakland 11, Calif., secretary.

Bay Counties Veterinary Medical Association, the second Tuesday of each month. E. Paul, Redwood City, Calif., secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. R. B. Barsaleau, 2333 E. Mineral King, Visalia, Calif., secretary.

(Continued on p. 33)

Alabama Veterinarian Joins Eaton Staff

Thomas V. Raines, Jr., D.V.M., has joined the veterinary department of Eaton Laboratories, a division of The Norwich Pharmacal Co., Norwich, N.Y. Born in Mobile, Ala., Dr. Raines obtained



Thomas V. Raines, Jr.

his degree in veterinary medicine at Alabama Polytechnic Institute in 1945. He was an instructor there after graduation, and then became diagnostician in animal disease at the Diagnostician Laboratory, Madison, Wis. Dr. Raines, with his wife and daughter, has moved from Madison to Norwich.

Kern County Veterinary Medical Association, the first Thursday evening of each month. A. L. Irwin, 301 Taft Highway, Bakersfield, Calif., secretary.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. W. H. Rocky, P. O. Box 121, San Luis Obispo, Calif., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. Lewis J. Campbell, 90 Corral de Tierra, Salinas, Calif., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month at the Hotel Corvelli, in Modesto, Calif. Lyle A. Baker, Turlock, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. Chester A. Maeda, 766 E. Highland Ave., San Bernardino, Calif., secretary.

Orange County Veterinary Medical Association, the third Thursday of each month. Donald E. Lind, 2643 N. Main St., Santa Ana, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. T. D. Harris, San Mateo, Calif., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. Robert E. Clark, Napa, Calif., secretary.

Sacramento Valley Veterinary Medical Association, the second Wednesday of each month. W. E. Steinmetz, 4227 Freepoint Blvd., Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. H. R. Rossell, 1795 Moore St., San Diego, Calif., secretary.

San Fernando Valley Veterinary Medical Association, the second Friday of each month at the Casa Escobar Restau-

rant in Studio City. John Chudacoff, 7912 Sepulveda Blvd., Van Nuys, secretary.

Southern California Veterinary Medical Association, the last Wednesday of each month. Don Mahan, 1919 Wilshire Blvd., Los Angeles 57, Calif., executive secretary.

Tulare County Veterinarians, the second Thursday of each month. R. B. Barsaleau, 2335 E. Mineral King, Visalia, Calif., secretary.

COLORADO—Denver Area Veterinary Society, the fourth Tuesday of every month. Richard C. Tolley, 5050 S. Broadway St., Englewood, Colo., secretary.

Northern Colorado Veterinary Medical Society, the first Monday of each month. M. A. Hammarlund, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins, Colo., secretary.

DELAWARE—New Castle County Veterinary Association, the first Tuesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. E. J. Hathaway, Clifton Park Manor, Apt. 73-5, Wilmington 2, Del., secretary.

FLORIDA—Central Florida Veterinary Medical Association, the second Friday of each month, time and place specified monthly. James B. Murphy, Eustis, Fla., secretary.

Jacksonville Veterinary Medical Association, the second Thursday of each month, time and place specified monthly. George F. Yopp, 4644 Main St., Jacksonville, Fla., secretary.

Northwest Florida Veterinary Medical Society, third Wednesday of each month, time and place specified monthly. Harold A. Tennant, Atmore, Ala., secretary.

Palm Beach Veterinary Society, the last Thursday of each month in the county office building at 810 Datura St., West Palm Beach. Ross E. Evans, 5215 S. Dixie Highway, West Palm Beach, Fla., secretary.

(Continued on p. 34)

Keep Teat OPEN—Keep It MILKING

To maintain unrestricted milk flow and provide antiseptic protection is of first importance in the care of injured teats. Scab teats. Stenosis, and in post operative therapy. Dr. Naylor Medicated Teat Dilators are SULFA-impregnated surgical dressings for the teat canal.

They act both medically and mechanically to provide prolonged broad spectrum germicidal activity and gentle non-irritating support to traumatized sphincter and teat mucosa. They promote normal tissue repair with a minimum of altered milking function of the streak canal. Positive retention—fit large or small teats.

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Have you used **BLU-KOTE** for Cowpox*, Ringworm, Moist Lesions, Skin Abrasions? Blu-Kote dries oozing lesions, reduces pus formation, controls secondary infection* . . . Quick Drying . . .

BLU-KOTE contains Acriflavine and Gentian Violet in combination with fungicidal Sodium Propionate and cleansing, debriding Urea. Effective against both bacterial and fungus infections most common in skin lesions of large and small animals.

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Ridge Veterinary Medical Association, the fourth Thursday of each month in Bartow, Fla. Paul J. Myers, Winter Haven, Fla., secretary.

South Florida Veterinary Society, the third Tuesday of each month, at the Seven Seas Restaurant, Miami, Fla. E. D. Stoddard, 6432 S. W. 8th St., Miami, Fla., secretary.

Suwannee Valley Veterinary Association, the third Friday of each month, at the Thomas Hotel, Gainesville, Fla. R. C. Mann, Rt. 1, Box 37, Ocala, Fla., secretary.

Volusia County Veterinary Medical Association, the fourth Thursday of each month. A. E. Hixon, 131 Mary St., Daytona Beach, Fla., secretary.

GEORGIA—Atlanta Veterinary Society, the second Tuesday of every month at the Elks Home on Peachtree St., Atlanta, Ga. J. L. Christopher, Smyrna, Ga., secretary.

ILLINOIS—Chicago Veterinary Medical Association, the second Tuesday of each month. Mark E. Davenport, Jr., 215 S. Edgewood Ave., LaGrange, Ill., secretary.

Eastern Illinois Veterinary Medical Association, the first Thursday of March, June, September, and December. A one-day clinic is held in May. H. S. Bryan, College of Veterinary Medicine, University of Illinois, Urbana, secretary.

INDIANA—Central Indiana Veterinary Medical Association, the second Wednesday of each month. Peter Johnson, Jr., 4410 N. Keystone Ave., Indianapolis 5, secretary.

Michiana Veterinary Medical Association, the second Thursday of every month except July and December, at the Hotel LaSalle, South Bend, Ind. J. M. Carter, 3421 S. Main St., Elkhart, Ind., secretary.

Tenth District Veterinary Medical Association the third Thursday of each month. W. E. Sharp, Union City, Ind., secretary.

IOWA—Cedar Valley Veterinary Association, the second Monday of each month, except January, July, August, and October, at Black's Tea Room, Waterloo, Iowa. H. V. Henderson, Reinbeck, Iowa, secretary.

Coon Valley Veterinary Association, the second Wednesday of each month, September through May, at the Bradford Hotel, Storm Lake, Iowa. D. I. Lee, Sac City, Iowa, secretary.

Fayette County Veterinary Association, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Northeast Iowa-Southern Minnesota Veterinary Association, the first Tuesday of February, May, August, and November at the Wisneslick Hotel, Decorah, Iowa, 6:30 p.m. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

KENTUCKY—Central Kentucky Veterinary Medical Association, the first Wednesday of each month. L. S. Shirrell, Versailles Rd., Frankfort, secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month in Louisville or within a radius of 50 miles. W. E. Bewley, P.O. Box "H," Crestwood, secretary.

MARYLAND—Baltimore City Veterinary Medical Association, the second Thursday of each month, September through May (except December), at 9:00 p.m. at the Park Plaza Hotel, Charles and Madison St., Baltimore. Md. Harry L. Schultz, Jr., 9011 Harford Rd., Baltimore, Md., secretary.

MICHIGAN—Mid-State Veterinary Medical Association, the fourth Thursday of each month with the exception of November and December. Robert E. Kader, 5034 Armstrong Rd., Lansing 17, Mich., secretary.

Saginaw Valley Veterinary Medical Association, the last Wednesday of each month. S. Correll, Rt. 1, Midland, Mich., secretary.

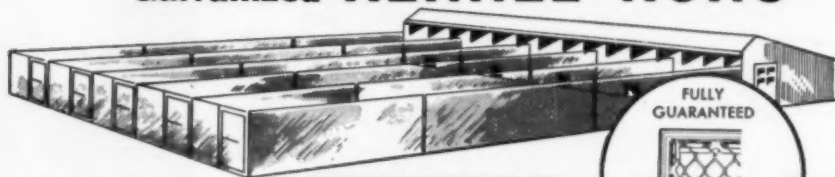
Southeastern Veterinary Medical Association, the fourth Wednesday of every month, September through May. Gilbert Meyer, 14003 E. Seven Mile Rd., Detroit 5, Mich., secretary.

(Continued on p. 36)

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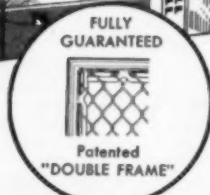
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Correspondence

Oct 8, 1956

Dear Dr. Aitken:

This is in particular reference to the issue of the AVMA JOURNAL dated Sept. 15, 1956, in which reviewer's comments are anonymously published at the conclusion of two papers on leptospirosis.

It is my feeling that any paper or comments worthy of publication should not be anonymous. Even if done with the authors' consent, as you so stated in your editorial for the same issue, the publication of the comments by the reviewer without attaching his name certainly belittles the reviewer's capabilities. Furthermore, and even more important, such procedure is unfair to the reader of the JOURNAL who deserves to know who has expressed an opinion after an acceptable paper.

I sincerely hope that this practice is not to be a continued policy of the AVMA publications.

s/Warren G. Hoag, D.V.M.,
Professor, Animal Pathology,
Virginia Polytechnic Institute.

[The procedure referred to above was somewhat of an innovation. We believe that practitioners wish to have, and should have, as soon as they are reliably available, both the pro and con comments of neutral observers on the merits and limitations of new therapeutic products and procedures. A reviewer's comments never will be used without the consent of the authors and giving both the authors and the reviewers an opportunity for rebuttal (revision) before publication, just as was done in the above case. However, we recognize the validity of Dr. Hoag's criticism so, if and when, this procedure is repeated, the reviewers will be identified.—W.A.A.]

(COMING MEETINGS—continued from p. 34)

MISSOURI—Greater St. Louis Veterinary Medical Association, the first Friday of the month (except July and August) at the Sheraton Hotel, Spring Ave. and Lindell Blvd. Allen B. Shopmaker, 136 N. Meramec, Clayton 5, Mo., secretary.

Kansas City Small Animal Hospital Association, the first Monday of each month, at alternating hospitals. W. F. Noland, 7304 Metcalf, Overland Park, Kan., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month at Exchange Hall, ninth floor, Livestock Exchange Bldg., 1600 Genessee St., Kansas City, Mo. Busch Meredith, 800 Woodwether Rd., Kansas City 5, Mo., secretary.

NEW JERSEY—Central New Jersey Veterinary Medical Association, the second Thursday of November, January, March, and May at Old Hights Inn, Hightstown, N. J. David C. Tudor, Cranbury, N. J., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday evening of each month from October through April at the Academy of Medicine, 91 Lincoln Park South, Newark, N. J. Myron S. Arlein, 2172 Milburn Ave., Maplewood, N. J., secretary.

(Continued on p. 37)

Northern New Jersey Veterinary Association, the fourth Tuesday of each month at the Casa Mana in Teaneck. James R. Tanzola, Upper Saddle River, secretary.

Northwest Jersey Veterinary Society, the third Wednesday of every odd month. F. B. Duke, 49 Taylor St., High Bridge, N. J., secretary.

Southern New Jersey Veterinary Medical Association, the third Tuesday of each month at the Collingswood Veterinary Hospital, Collingswood. W. E. Snyder, E. Kings Highway and Munn Ave., Haddonfield, secretary.

NEW YORK—New York City, Inc., Veterinary Medical Association of, the first Wednesday of each month at the New York Academy of Sciences, 2 East 63rd St., New York City. C. E. DeCamp, 43 West 61st St., New York 23, N. Y., secretary.

Monroe County Veterinary Medical Association, the first Thursday of even-numbered months except August. Irwin Bucher, 50 University Ave., Rochester, N. Y., secretary.

NORTH CAROLINA—Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel, Greensboro. Joseph A. Lombardo, 411 Woodlawn Ave., Greensboro, secretary.

Eastern North Carolina Veterinary Medical Association, the first Friday of each month. Wm. Allen Potts, 401 W. James St., Mount Olive, secretary.

Piedmont Veterinary Medical Association, the last Friday of each month. John G. Martin, Boone, N. Car., secretary.

OHIO—Cuyahoga County Veterinary Medical Association, the first Wednesday of each month, September through May (except January), at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. Ed. R. Jacobs, 5522 Pearl Rd., Cleveland, Ohio, secretary.

OKLAHOMA—Oklahoma County Veterinary Medical Association, the second Wednesday of every month. James M. Brown, 2818 W. Britton Rd., Oklahoma City, secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month in Directors' Parlor of the Brookside State Bank, Tulsa, Okla. Don L. Hohmann, 538 S. Madison St., Tulsa, Okla., secretary.

PENNSYLVANIA—Keystone Veterinary Medical Association, the fourth Wednesday of each month at the University of Pennsylvania School of Veterinary Medicine, 39th and Woodland Ave., Philadelphia 4, Pa. Raymond C. Snyder, 39th and Woodland Ave., Philadelphia 4, Pa., secretary.

(Continued on p. 38)

The Swaps Fracture Case

The famous Thoroughbred, Swaps, developed a partial fracture of his left third metatarsal bone on October 9. A cast was applied the next day. On October 14, in attempting to rise, Swaps struck the leg against a wall, breaking the cast and extending the fracture. Dr. Wm. Miller, Haddon Heights, N.J., the track veterinarian, called in Dr. Jacques Jenny, of the University of Pennsylvania, who took further radiographs which showed the linear fissure extending to the distal extremity of the bone.

The insurance company forbade casting the horse, so he was placed in a sling and another cast was improvised. "The foot was encased in a mold made of . . . material used for dental plates" with a stainless steel bar extending from the shoe upward on each side of the leg and encased in a 2-inch thick plaster cast which extended to the hock.—*The Blood Horse*, Oct. 20, 1956.



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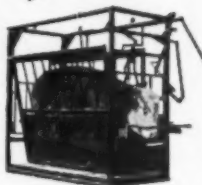
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W W CATTLE CHUTE COMPANY
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The World's Finest Cattle Handling Equipment

(COMING MEETINGS—continued from p. 37)

SOUTH CAROLINA—Piedmont Veterinary Medical Association, the third Wednesday of each month at the Fairforest Hotel, Union, S. Car. Worth Lanier, York, S. Car., secretary.

TEXAS—Coastal Bend Veterinary Association, the second Wednesday of each month. J. Marvin Prewitt, 4141 Lexington Blvd., Corpus Christi, Texas, secretary.

VIRGINIA—Central Virginia Veterinarians' Association, the third Thursday of each month at the William Byrd Hotel in Richmond at 8:00 p.m. M. R. Levy, 312 W. Cary St., Richmond 20, Va., secretary.

Northern Virginia Veterinary Society, the second Wednesday of every third month. Meeting place announced by letter. H. C. Newman, Box 145, Merrifield, Va., secretary.

Southwest Virginia Veterinary Medical Association, the first Thursday of each month. I. D. Willson, Blacksburg, secretary.

WASHINGTON—Seattle Veterinary Medical Association, the third Tuesday of each month in the Trinity Episcopal Church, 8th and James St., Seattle, Wash. P. R. Des Rosiers, 5508 2nd Ave., N. W., Seattle 7, Wash., secretary.

South Puget Sound Veterinary Association, the second Thursday of each month except July and August. O. L. Bailey, P. O. Box 906, Olympia, Wash., secretary.

WEST VIRGINIA—Kyowva (Ky., Ohio, W. Va.) Veterinary Medical Association, the second Thursday of each month in the Hotel Prichard, Huntington, W. Va., at 8:30 p.m. Harry J. Fallon, 200 5th St., W. Huntington, W. Va., secretary.

WISCONSIN—Milwaukee Veterinary Medical Association, the third Tuesday of each month, at the Half-Way House, Blue Mound Rd. George F. Lynch, 201 West Devon St., Milwaukee 17, Wis., secretary.

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Southern California small animal hospital desires capable veterinarian with nice personality for well-established business; good clientele. State experience, age, and salary first letter. Address "Box X 14," c/o **JOURNAL** of the AVMA.

Third veterinarian desired in a 3-man practice in Chicago suburb; \$5,000, no living quarters. Position better for young veterinarian needing experience. Address "Box Y 5," c/o **JOURNAL** of the AVMA.

Full-time assistant wanted in mixed practice, central New York; new small animal hospital and dairy practice. Salary plus bonus determined by experience. New York license. Give references, training, experience, age, marital status; recent graduate desired. Address "Box Y 25," c/o **JOURNAL** of the AVMA.

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(Continued on p. 42)

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ANTI-CANINE DISTEMPER SERUM AND ANTI-INFECTION
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Other products to be added.

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"highest glucocorticoid activity..."

(CLASSIFIED ADS—continued from p. 38)

Wanted—Practices

Graduate, 1950, 6 years in own Middlewest mixed practice desires mixed or small animal practice in Rocky Mountain area. Will lease, buy, or consider partnership. Address "Box Y 28," c/o JOURNAL of the AVMA.

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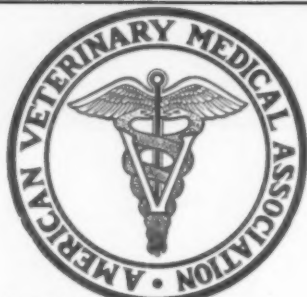
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(Continued on p. 43)



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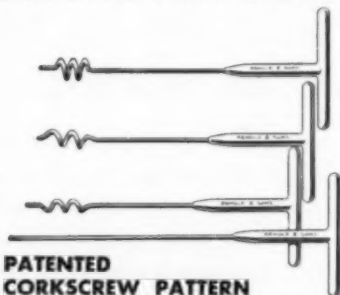
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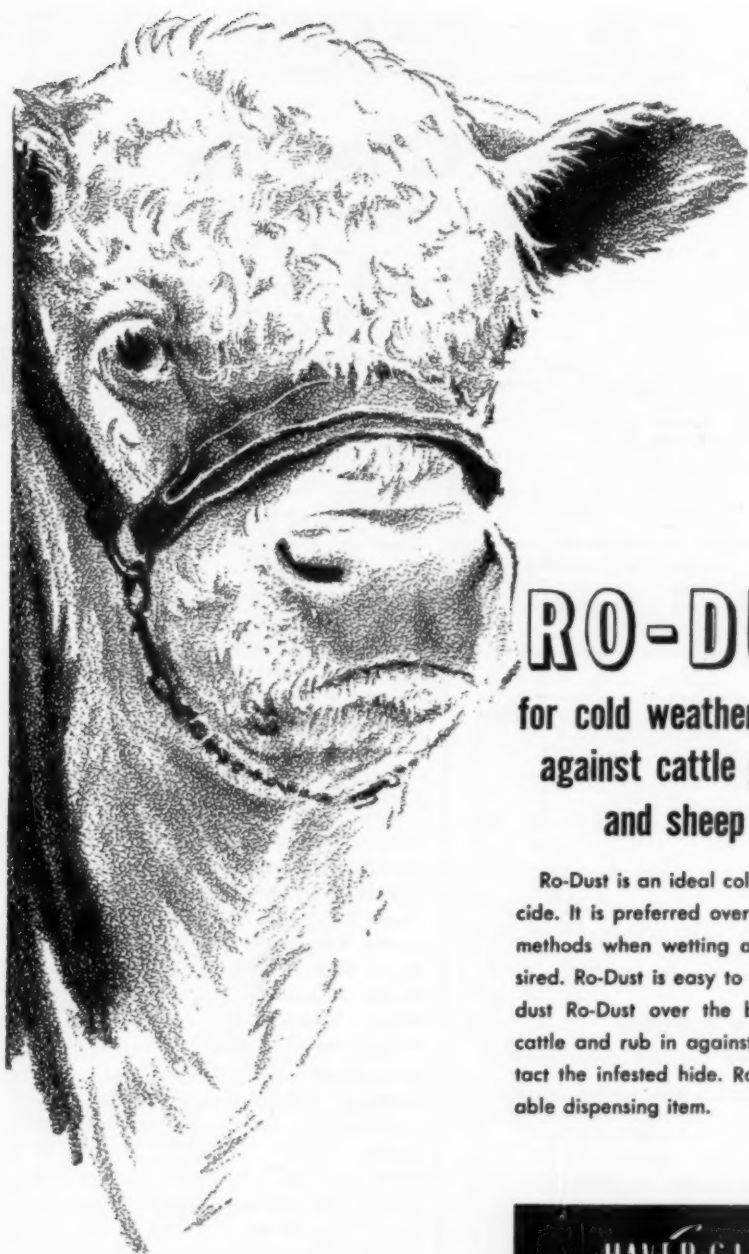
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High tissue content of Jen-Sal Rabies Vaccine provides high vaccine virus titres for maximum immune response. In critical tests, dogs vaccinated with a standard 3 cc. dose of Jen-Sal vaccine consistently withstood virulent street virus challenge.

*homogenized tissue
for rapid reconstitution*

Jen-Sal Rabies Vaccine reconstitutes in seconds. Tissue particles, minute enough to permit passage through a 24 gauge needle,

assure a vaccine which is both effective and easy to administer. No evidence of undue pain or local irritation is noted on routine administration.

*newest production refinements
give you a superior product*

Jen-Sal Rabies Vaccine contains living, safety-proved Flury virus modified by egg passage. Virus loss in storage is inhibited by new lyophilization refinements plus a Jen-Sal stabilizing agent. Meticulous control and rigorous testing guarantee a uniform vaccine of incomparable quality. Supplied in 10 dose bulk vial and 5-1 dose package.

JENSEN-SALSBERY LABORATORIES, INC.
KANSAS CITY, MISSOURI

